

40 Research du Jour 46 The Game's Afoot 66 Phoenix Rising

GeorgiaTech

ALUMNI MAGAZINE

Fall 2005

32 The Road
Less Traveled

GeorgiaTech

Alumni Magazine Volume 82, Number 2

32

The Road Less Traveled

In 1951 Gene Espy, IM 50, became the second person ever to walk the entire Appalachian Trail in a continuous thru-hike. Espy didn't set out from Georgia's Mount Oglethorpe to get his name in history books. "I was out to see God in nature," he says. *Cover photo by Gary Meek.*

40

Research du Jour

Georgia Tech's new \$7.3 million Food Processing Technology Building houses more than 36,000 square feet of high-tech labs, a high-bay space with an overhead crane and a high-impact design that can only be described as the "wow factor."

46

The Game's Afoot

In the School of Literature, Communication and Culture, a group of interdisciplinary faculty and students are applying serious study to electronic games. "In the 21st century, games will play the same role as films and books to give deep, cultural experiences."

62

Natural Ability

Jeff Lunsford aimed for a career as an astronaut. He steered off in a different direction and his life story has led him to San Diego, where he is the chairman, president and chief executive of WebSideStory.

66

Phoenix Rising

The Southeast's biggest decorative granite and marble supplier had crashed and burned but four Georgia Tech fraternity brothers applied management skills learned at the Institute to rescue the fallen giant.

Fall 2005 PREVIEW



4

CampusSpirit

Responding to hurricane Katrina

9

Viewpoint

Best Tradition

10

Feedback

The write stuff

12

InQuotes

Comments in the media

16

InFocus

- Top Golf School
- Coral Dynamics
- Bioterror Detector

22

Tech Notes

- Tech in Top 10
- Enterprise Park
- African-American Engineers
- \$1 Million Math
- Tissue Rebirth
- Novel Dedication
- Ultimate Mule
- Fuel Cells
- Switchable Solvents
- Beatles & Duke
- Burdell's Review
- Webb's New Post
- Saving Jobs

31

Alumni Almanac

Fifty years ago Tech students stood up to the Georgia governor's Sugar Bowl demand.

44

Pacesetter

Starstruck: John Chapman

70

Interview

Ambassador-in-residence John Kelly says the struggle against terrorism will take time, energy and commitment, but the United States will prevail.

76

Faculty Profile

Roger Drury: International Adventurer

80

Photo Finish

Atkins' Power Diet

Photo: Christopher Gooley

Tech Responds to the

CAMPUSPIRIT

Reaching Out as a Community with 'Heart and Help'

Georgia Tech continues efforts to aid victims of Hurricane Katrina. Students set a fund-raising goal of \$50,000. The Institute temporarily housed 275 Tulane University students on campus and Alexander Memorial Coliseum served as a temporary shelter for nearly 300 evacuees.

"Georgia Tech's response has been incredible. The Georgia Tech faculty, students and staff were right there helping provide services and Tech has bent over backwards to help in any way they could," said Tim English, executive officer of the metro Atlanta chapter of the Red Cross.

The Institute also has opened its undergraduate and graduate admissions process to students from universities closed because of the hurricane. Less than two weeks after the devastating storm, Tech had enrolled 55 displaced students. In addition, the Georgia Tech Office of Community Service is coordinating a student trip during winter break to assist in the continuing cleanup efforts.

"Georgia Tech's mission is education, research and service," said President Wayne Clough. "I have never been more proud of our students, faculty, staff and alumni who have volunteered time, money and creative talents to assist those in need. The Georgia Tech community has responded with heart and help in a way few others have. >>>

Campus Photos:
Nicole Cappello;
New Orleans Photo:
AP/Wide World



The Tragedy of Katrina





“Georgia Tech’s response has been incredible.”

“We are continuing to consider ways we might partner with faculty and graduate students from the University of New Orleans and Tulane to assist in their research and educational efforts,” Clough said. “We are also beginning to explore how our faculty and students might help in the major effort needed to plan and rebuild the damaged areas.

“During the coming months and years there will be many opportunities for the talents of our unique community to help our fellow citizens in the impacted areas recover from this stunning disaster.”

The Alumni Association is connecting Tech grads who want to help with those who need it. The Association’s database shows more than 2,000 Georgia Tech alumni living within a 100-mile radius of hurricane-ravaged regions along the Gulf Coast. More than 50,000 Alumni Association e-mail recipients were given the opportunity to fill out an online form if they wanted to help or if they needed assistance.

Within days of going online, more than 50 alumni had written messages offering help — a condo in Palm Harbor, Fla.; a garage apartment in Austin, Texas; a house in Dallas; temporary or permanent housing in the Baton Rouge, La., area; commercial business space rent free in Griffin, Ga.; architectural services; and the airlifting of food and cargo on a private aircraft. And offers of help continue to pour in. GT

A message board and links to the Red Cross and Salvation Army Web sites also are available at gtalumni.org.



CAMPUSPIRIT <<<



Georgia Tech Alumni Association

Joseph P. Irwin, IM 80, Publisher

John C. Dunn, Editor

Neil B. McGahee, Senior Editor

Maria M. Lameiras, Senior Editor

Kimberly Link-Wills, Senior Editor

Everett Hullum, Design

Alumni Association Executive Committee

J. William Goodhew III, IM 61
Chairman

Carey H. Brown, IE 69
Past Chairman

Janice N. Wittschiede, Arch 78, M Arch 80
Chairman Elect/Treasurer

C. Meade Sutterfield, EE 72
Vice Chairman Activities

William J. Todd, IM 71
Vice Chairman Roll Call

Walter G. Ehmer, IE 89

Al Trujillo, AE 81

Joseph P. Irwin, IM 80
President

Advertising

Melinda McGuire

(404) 894-0765 • E-mail:

melinda.mcguire@alumni.gatech.edu

Georgia Tech Alumni Magazine

(ISSN: 1061-9747) is published quarterly (Summer, Fall, Winter and Spring) for contributors to the annual Roll Call of the Georgia Tech Alumni Association, 190 North Ave. NW, Atlanta, GA 30313.

Georgia Tech Alumni Association allocates \$10 from a contribution toward a year's subscription to its magazine.

Periodical postage paid at Atlanta, GA and additional mailing offices.

© 2005 Georgia Tech Alumni Association
Main Number (404) 894-2391.

Postmaster: Send address changes to Georgia Tech Alumni Magazine, 190 North Ave. NW, Atlanta, GA 30313. Editorial phone (404) 894-0750/0760. Fax (404) 385-4637. E-mail: editor@alumni.gatech.edu; gtalumni.org.

VIEWPOINT<<<

Best Tradition

The ramifications of hurricane Katrina will impact the United States in countless ways for years to come. There are significant implications for Georgia Tech alumni and their families in the areas hit hardest. We have more than 2,000 alumni in the region of the Alabama, Louisiana and Mississippi Gulf Coast.

One hallmark of Georgia Tech's alumni is their generous spirit. And this situation is no different. Many of you are aware of our efforts at the Alumni Association to facilitate connections between alumni who want to help and those who are in need of aid. It's a service that allows you to participate. Go to our Web site www.gtalumni.org and click on the appropriate link to sign up to help or let us know if you need help. The offers to help that we've received on our Web site are truly inspiring. They have more than tripled the requests for help.

"We are available in any capacity the Alumni Association feels is needed," read one response from more than 50 we received within just days of the posting of the message board. Many alumni volunteered their time and many others opened their homes to displaced families and students. Another response was to do "whatever is needed."

There are also significant impacts on our student body. We have students from those area universities now matriculating at Tech and we have students here whose families have been hit hard by the disaster. The president and his administration are assessing the many needs and preparing plans to address them.

It has been observed that times of crises bring out the worst in some people and the best in others. I have been fortunate to witness our alumni, faculty, staff and students — on campus and in communities around the country — prove themselves to be the best people in the worst of times.

Joseph P. Irwin, President



>>> **FEEDBACK****Commitment to Tech**

Carey Brown, immediate past chairman of the Alumni Association, played an important role in my son Robert's decision to attend Georgia Tech. Robert was admitted to the President's Scholarship Program and his mom and I could not be happier. Randy McDow is doing a fantastic job directing the program and presenting it and Tech to prospective students and parents.

Robert pledged Kappa Alpha, which was Tyler Brown's fraternity. The fact Carey was instrumental in recruiting Robert and my son pledged his son's fraternity is providential. Tyler was an extraordinary leader and he left a legacy that does not go unnoticed by young men who are following in his footsteps. His commitment to family, Georgia Tech and his country was extraordinary and I can only hope my son will see the impact of his commitment and attempt to emulate his record.

I thank Carey for his commitment to Tech and help in making it a world-class institution.

Robert E. Binion
Norcross, Ga.

Tyler Brown, Mgt 01, HTS 01, a former student body president, was serving as an Army first lieutenant when he was killed in action in Iraq on Sept. 14, 2004.

Ridin' in the Wreck

Daddy, Henry Jackson of Lawrenceville, Ga., is now 95. It has been 73 years since he graduated with a degree in commerce in 1932.

Several years ago he had to cut back on attending Georgia Tech sporting events. He still gets season tickets to football and basketball games even though he isn't able to attend.

When he celebrated his 95th birthday, we thought it would be wonderful if he could ride in the Ramblin' Wreck. Georgia Tech accommodated and what a surprise it was! Daddy was surrounded by family and friends when the Ramblin' Wreck drove up to cheers and music playing "I'm a Ramblin' Wreck from Georgia Tech."

Daddy was born on Feb. 20, 1910 — one of 21 children — and raised on a farm in Lawrenceville. Education was a high priority in his family. In fact, his father built a one-room schoolhouse in Gwinnett County called "Jackson Academy" where Daddy began his education.

From those early years, Daddy was determined to go to Georgia Tech, and he did. For four straight years, he was on the honor roll and received the Phi Kappa Phi, Beta Gamma Sigma and Tech President Marion L. Brittain's Gold T scholastic recognition. After graduating from Tech with honors, Daddy was hired by the state of Georgia and became the director of business administration for the Department of Family and Children Services until his retirement in 1972.

Daddy now lives at the Courtyard Gardens assisted living facility in Lawrenceville and got a second ride in the Ramblin' Wreck in September. He's very pleased when Tech has a great year in athletics. He remembers the years under coach Bobby Dodd as golden. But Daddy always has a positive attitude even if Tech has a difficult season.

Meanwhile, our entire family joins him in continuing to

cheer for the White and Gold.

Sandra Jackson Rountree
and husband, James T.
Rountree, IM 71
Suwanee, Ga.

Humbling Experience

I was among the students, faculty and staff volunteers assisting evacuees from New Orleans and the Gulf Coast who were given temporary shelter at Alexander Memorial Coliseum following the incredible destruction caused by hurricane Katrina.

I spent a midnight-to-6 a.m. shift in early September and learned a good deal about humility. It humbled me to see people who've survived this entire ordeal finally get a good night's rest while the Georgia Tech Police Department watched over them.

We had plenty of students doing various tasks and every now and then we'd chat with members of the Red Cross, Georgia Tech police and people who were awake.

One volunteer walked an infant back and forth until the baby finally fell asleep. One girl had the shakes and some campus police officers and a nurse helped her. An elderly lady needed medication and a student got in her car and ran out to a drugstore and got them for her without being pressed or

asked. We stayed up during the night while the victims slept comfortably under a Georgia Tech roof.

I spotted a group of students in a corner huddled around laptops. It looked like a LAN party, but they were optimizing a Web interface for getting survivor info from various Web sites. I had an enjoyable chat with a biology professor about the work they do with cancer drugs and we talked about his son who is in the field of computer science I'd like to get into, network security and software engineering. Later in the morning we talked with a group of students and a campus policeman regarding Facebook and other things we experience in this world.

I thank President Wayne Clough for opening up our campus to relief services. I'll see him at graduation in December. I'll be the one in a cap and gown.

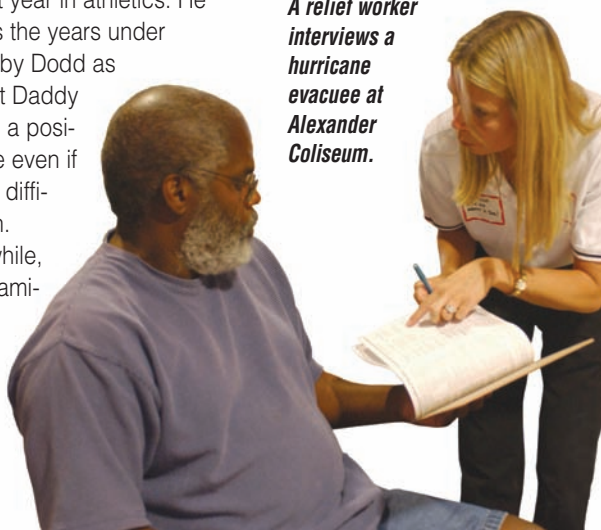
Babak Banijamali
Senior, Computer Science

**We Welcome Mail**

The ALUMNI MAGAZINE welcomes letters. Please include your full name, address and telephone number. Letters may be edited for clarity, space and content.

Mail/e-mail to:
Georgia Tech Alumni
Publications
190 North Ave. NW
Atlanta, GA 30313
Fax: (404) 385-4637
editor@alumni.gatech.edu

**A relief worker
interviews a
hurricane
evacuee at
Alexander
Coliseum.**



>>> “INQUOTES”

A football team — you don't necessarily have to have the biggest and the fastest, guys who can jump the highest and bench press the most — but if you've got unity and oneness, you have a chance to be a champion.

Chan Gailey,
football coach,
in the *Atlanta-Journal
Constitution*



Atlanta is well-known for its reality casting successes. The city is filled with beautiful women and Georgia Tech is here so we knew we'd find more than a few brainy guys as well.

Luke Conklin,
casting director for “Beauty and the Geek,”
in the *Atlanta Journal-Constitution*



What is needed from the current world leaders is a serious commitment, long-term goals and steady leadership and coordination to help China rise and change, peacefully. The success or failure of China's rise are too consequential to be left for Beijing to manage alone.

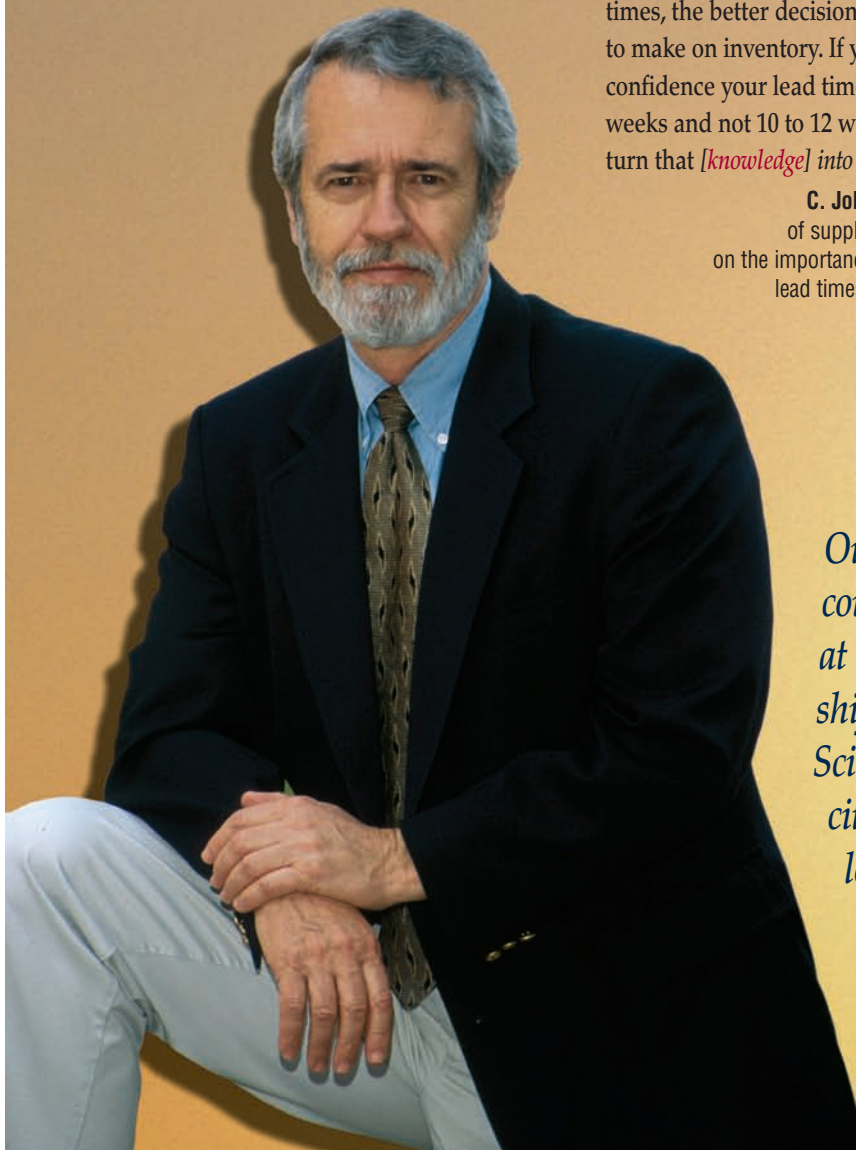
Fei-Ling Wang,
professor of international affairs
at Georgia Tech and international affairs
fellow of the Council on Foreign Relations,
in the *International Herald-Tribune*

The more *confidence* you have in lead times, the better decisions you will be able to make on inventory. If you know with confidence your lead times are four to six weeks and not 10 to 12 weeks, you can turn that *[knowledge]* into a lot of *cash*.

C. John Langley, professor
of supply chain management,
on the importance of tracking product
lead times due to the high cost
of doing business
internationally,
in *DC Velocity*

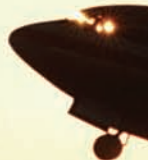
I am a fifth-generation Georgian who has recently sold many long-term business interests and I am in a position to give something back to this state.

Virgil Williams, IE 63,
on his decision to buy the lease
for Lake Lanier Islands,
in the *Gwinnett (County, Ga.) Daily Post*



Our ability to innovate in this country is diminishing. If you look at the number of patents, they are shifting now to other places. Scientific papers that are published, citations — we are clearly losing ground in terms of the competitive stance we've had.

Don Giddens, dean of Tech's College of
Engineering, in Knight Ridder newspapers





It's not even about money. Now it's more about everybody coming together and just trying to live as one. Just giving money, that's nothing. You're supposed to do that. It's just about the way we treat people. I keep looking at my kids. You don't think about anything else, *you just hold them so tight.*

Stephon Marbury, CIs 00, point guard with the New York Knicks, who has contributed between \$500,000 and \$1 million to help victims of hurricane Katrina, on ESPN

NBAE Photos



There are two ways to track spammers. You can track them forward from received mail or work backwards by following the money. Everything will be fake, there will be a fake firm address, they will hijack innocent people's computers to send the mail. But one thing has to be real — ***where they want you to send the money.***

Paul F. "Pete" Wellborn III, ICS 86, an Atlanta technology attorney, in *Lawyers Weekly*

The biggest mistake grad students make is not realizing that they can get paid to go to grad school. But money isn't everything. Do not just go for the university that pays the highest stipend. Rather, choose one that offers the best learning opportunity and career options after graduation.

Thomas Kurfess, professor of mechanical engineering at Georgia Tech, in the September issue of *Spectrum Online*

Not only does it figure out where the finger is — it can display text or a graphic on that object. That is really a nice ability. You want it to be powerful enough to track, but not powerful enough to hurt anybody's eyeball. You can do that no problem, but people's perception needs to be overcome.

Thad Starner, professor of computing at Georgia Tech and an expert in gesture-recognition technology, about a Japanese Smart Laser Scanner prototype designed to use a laser and an array of movable micro-mirrors to track finger motion — it could be used to recognize letters written on air, on Discovery Channel news



Since scientific innovation has long fueled economic growth, there is a danger that the U.S. will no longer be dominant in innovation. A larger number of international patents are being obtained overseas, research and development facilities are moving overseas. **If we are not innovating here, the economic benefits will go elsewhere too.**

Wayne Clough, president of Georgia Tech and a member of the President's Council of Advisors on Science and Technology, in the *Wall Street Journal*

The unions are seeing the reality of the situation. Their jobs and the future of their airlines are in very deep jeopardy.

Fred Allvine, Georgia Tech professor emeritus and airline expert on the risk of a union strike forcing airlines to seek Chapter 11 bankruptcy protection, in the *New York Times*



HOMECOMING

CLASS OF '55

6:30 – 10 p.m. Friday, October 28

Georgia Tech Hotel and Conference Center

Join your classmates and friends as we celebrate your milestone 50th Georgia Tech reunion! You'll be treated to an evening of first-class food including hors d'oeuvres and a sit-down dinner.

Class of 1955 Web site — Visit your class' very own Web page for updated details about Homecoming Weekend! gtalumni.org/1955.

Old Gold Society Reunion — Saturday, October 29, Postgame
(If game time is 5 p.m. or later, the event will be held at 9:30 a.m.)

As the newest inductees into the Old Gold Society, you are invited to join classmates who "got out" in 1955 or earlier for this special tradition. Bring a guest and come to the Alumni House for light snacks and drinks.

CLASS OF '65

7 – 10:30 p.m. Friday, October 28

Wardlaw Center (177 North Ave.)

Enjoy an elegant evening as we celebrate your 40th reunion in the Wardlaw Center overlooking Historic Grant Field. You'll have a buffet dinner of fabulous food, music from your days at Tech and plenty of beer, wine and non-alcoholic beverages (all included in the cost).

Class of 1965 Web site — Visit your class' very own Web page for updated details about Homecoming Weekend! gtalumni.org/1965

CLASS OF '80

7 – 11 p.m. Friday, October 28

Basil Garden at the Georgia Tech Alumni House
(190 North Ave.); rain site ballroom inside

It's been 25 years since you "got out" of Tech so come celebrate your milestone reunion with your classmates and friends. Join us as we reminisce about our days at Tech underneath the stars at the Alumni House Basil Garden. We'll have a first-class buffet dinner, including a mashed potato martini bar and other sumptuous food!

Class of 1980 Web site — Visit your class' very own Web page for updated details about Homecoming Weekend! gtalumni.org/1980

Alumni Tailgate Party — Saturday, October 29

Two and a half hours before kickoff, Tech Tower Lawn

Before heading over to the big game, join your classmates and friends at the pregame tailgate for good food and fun!

Tech vs. Clemson Football Game — Saturday, October 29
Time to be announced

Sit with your classmates at the game by ordering tickets through the Alumni Association. *Note: Tickets will likely be in the upper North stands.*

Old Gold Society Reunion — Saturday, October 29

Postgame (If game time is 5 p.m. or later, the event will be at 9:30 a.m.)
Georgia Tech Alumni House

Join the Class of 1954 and prior for a special reunion and toast the newest members inducted into the Old Gold Society, the Class of 1955.

Join in the fun at Homecoming! It is that time of year to return to campus to reminisce about your college days with friends and family. Whether it is your first time back to the Georgia Tech campus or your yearly pilgrimage, we have something planned for everyone. You, your family and friends are invited for a weekend of stimulating seminars, tours of campus, the pregame alumni tailgate party and of course football! In addition, you will not want to miss out on our reunion parties for the classes of 1980, 1965 and 1955. And, if your class is not one of the three hosting a reunion this year, be sure to join us for this year's Haunted Buzz Bash — Georgia Tech's all-alumni reunion party. Make plans now to join us for Homecoming Weekend 2005!

SCHEDULE OF EVENTS

Thursday, October 27

5 - 8 p.m.

Registration

Georgia Tech Hotel and Conference Center

6 - 7 p.m.

Keynote Alumni Seminar: From North Avenue to Professional Sports Car Racing —
The Journey of Larry Huang

Ballroom at Georgia Tech Hotel and Conference Center

7 - 8:30 p.m.

Wine Tasting: Trends in the Wine Market
2005 and Beyond

Ballroom at Georgia Tech Hotel and Conference Center

Friday, October 28

8:30 a.m. - 4 p.m.

Registration

Global Learning Center, Technology Square

9 a.m. - 3:30 p.m.

Seminars and Campus Tours

Global Learning Center, Technology Square

3:30 - 4:30 p.m.

State of the Institute Address

by President Clough

Global Learning Center, Technology Square

7:30 - 10:30 p.m.

Haunted Buzz Bash 2005

Festival Area at Bobby Dodd Stadium

6:30 - 10 p.m.

Class of 1955 50th Reunion Party

Georgia Tech Hotel and Conference Center

7 - 10:30 p.m.

Class of 1965 40th Reunion Party

Gordy Room at Wardlaw Center

7 - 11 p.m.

Class of 1980 25th Reunion Party

Basil Garden at the Georgia Tech Alumni House

Saturday, October 29

8 a.m.

Ramblin' Wreck Parade

Fowler Street

Pregame

Alumni Tailgate Party

Tech Tower Lawn

Time TBA

Georgia Tech vs. Clemson

Bobby Dodd Stadium

(Game time will be announced online 7-10 days prior)

Postgame

Old Gold Society Reunion

Georgia Tech Alumni House

(If game time is 5 p.m. or later, the event will be at 9:30 a.m.)

2005

Hosted by:

**Date: Friday, October 28****Time: 7:30 - 10:30 p.m.****Place: Festival Area at
Bobby Dodd Stadium
West Stands**

Come See What Goes Buzz in the Night!

Buzz Bash, Tech's all-alumni party, has quickly become a Homecoming favorite and the place to be to catch up with fellow alumni and friends on the Friday night of Homecoming Weekend.

Join us for a truly spooktacular event!
**Costumes are encouraged
and trick-or-treating is
welcome.**

**Young
Alumni Loft**
will be the place to be for
graduates of the classes of 1996
to 2005.

Fireworks are back!
and will light up the sky
at 9:15 p.m.

Free parking
will be available.

**Homecoming
2005
Oct. 27-29**

Online registration
and complete
information:

**gtalumni.org/
homecoming**

or call
800.GTALUMS to
request a brochure

REGISTRATION

DEADLINES

October 13 by fax or mail**October 20 online at gtalumni.org/homecoming**

After October 20, please plan to register at the event entrance or at
Homecoming Headquarters during Homecoming Weekend.

Name: _____

(First)

(Last)

Maiden Name: _____ GT Degree & Class: _____

(e.g. ME '88)

Street Address: _____

City: _____ State: _____ ZIP: _____

Daytime Phone: _____ E-mail Address: _____

(Required for confirmation)

Additional Guest Names: _____

Special Dietary or Access Requests: _____

Includes admission for one person to all Seminars Thursday & Friday**Two-day Seminar Pass**

Number attending _____ @ \$20 each= _____

Boxed Lunches

Number of Lunches _____ @ \$10 each= _____

Please indicate the seminars you plan to attend:

Thursday, October 27

Professional Sports Car Racing
Wine Tasting

Number attending _____
Number attending _____

Friday, October 28

Session I ~ 9 - 10:15 am

Ethics and Professional Responsibility
Pills, Patches and Prescriptions
Chemical Communication
Tax-wise Estate Planning (9 a.m. - noon)
Campus Walking Tour

Number attending _____
Number attending _____
Number attending _____
Number attending _____
Number attending _____

Session II ~ 10:30 - 11:45 a.m.

Tech Traditions
GT Men's Glee Club
Campus Bus Tour

Number attending _____
Number attending _____
Number attending _____

Session III ~ noon - 1:30 p.m.

Increasing Fuel Efficiency
Face-to-face Conversations
Flexible Future

Number attending _____
Number attending _____
Number attending _____

Session IV ~ 2 - 3:30 p.m.

Grand Challenges in Mathematics
Voice Over Internet Protocol
Robotics & Insects
Campus Walking Tour

Number attending _____
Number attending _____
Number attending _____
Number attending _____

EVENTS

Friday, October 28

Buzz Bash

Adults _____ @ \$20 each= _____
Young Alumni ('96-'05) _____ @ \$17 each= _____
GT Faculty & Students _____ @ \$15 each= _____
Children 12 & under _____ FREE
Number attending _____ @ \$70 each= _____
Number attending _____ @ \$55 each= _____
Number attending _____ @ \$60 each= _____

Class of 1955 Reunion Party

Class of 1965 Reunion Party

Class of 1980 Reunion Party

Saturday, October 29

Alumni Tailgate Party

Adults _____ @ \$15 each= _____
Children 12 & under _____ @ \$6 each= _____
Number attending _____ @ \$35 each= _____
Number attending _____ @ no charge

Football Tickets

Old Gold Society Reunion

EVENT AND SEMINAR TOTAL

= \$ _____

SUBMITTING REGISTRATION

☐ You can register ONLINE at gtalumni.org/homecoming

☐ Or FAX this registration form, including credit card information and any special requests, to **(404) 894-5113**.

Please bill my



Card Number: _____ Exp. Date: _____

Signature: _____

☐ Or MAIL to **Georgia Tech Homecoming Weekend,
190 North Ave., Atlanta, GA 30313.**

Please make checks payable to the Georgia Tech Alumni Association.

IN FOCUS

Tech Named No. 1 Golf School

With four top-five finishes in the past five years, a top-flight on-campus practice facility and “the best young coach in college golf” as its most important factors, Georgia Tech has been rated the No. 1 school in college golf. *Golf Digest* magazine judged each school in four categories — academics, climate, coach/facilities and golf performance. “There are a lot of people who work hard to try and have good teams, so it’s a huge honor to be recognized for what we’ve done,” says Tech coach Bruce Heppler. “It’s one of the nation’s most influential golf publications. It’s a huge compliment to acknowledge the people who’ve raised the money, administrators who supported the program and the players who’ve spent countless hours practicing to produce great results. We’ve been fortunate to have some wonderful players here.” Tech has played in the NCAA championship each of the past eight years, finishing in the top five six times including runner-up finishes in 2000, 2002 and 2005. The program has also captured three Atlantic Coast Conference championships, produced three National Players of the Year and eight different players who earned All-America honors 25 times, including two-time All-American Chan Song, Mgt 05 (right). Six different players have been named All-America Scholars and three players have represented the United States in Walker Cup competition. >>>

Photo: Christopher Gooley



IN FOCUS >>>

>>> **INFOCUS**

Coral Dynamics

Scientists and policy experts led by Georgia Tech are collaborating with villagers on the islands of Fiji to protect and generate income from their coral reef. Instead of breaking off pieces of live coral rock substrate for sale to the saltwater aquarium industry, villagers planted a crop of synthetic rock that became naturally covered by desirable species. The project is intended to reward villagers now for conserving the reef they need in the future to make a living — including potential income from the discovery of drug compounds in reef organisms. The coral reef in Fiji holds great promise because of high species diversity and the tendency of organisms in these habitats to fight back against predators, competitors and pathogens by evolving chemical defenses, according to Tech biology professor Mark Hay, the project's principal investigator. "We are trying to connect the value of the drugs discovered with efforts and rewards for conservation of biodiversity," Hay says. >>>



>>> **IN FOCUS**





Detecting Potential Bioterror Agent

Georgia Tech researchers have developed a new technique that allows the rapid identification of the species, strain and infectious phase of the potential biological terrorism agent *coxiella burnetii*. The bacterium causes the human disease Q fever, which can cause serious illness and even death.

The laboratory test delivers results in about five minutes compared to about two hours for the current lab technique.

"Because of its potential use as a bioweapon, we needed a method to detect *coxiella burnetii* at an early stage, and we needed to be able to determine which strain is present so authorities can determine the geographic area from which it came," says Facundo Fernandez, an assistant professor in Tech's School of Chemistry and Biochemistry.

Fernandez and PhD student Carrie Young (*left*), a chemist at the Centers for Disease Control's Environmental Health Lab, collaborated with researchers at the National Center for Environmental Health and the National Center for Infectious Diseases. They combined mass spectrometry — an analytical technique to study ionized molecules in the gas phase — and a mathematical data analysis technique called partial least squares analysis.

Combining these techniques into one method is a novel concept and this research represents the first time that *coxiella burnetii* has been rapidly detected at the strain level, Fernandez says.

Researchers believe the technique also will work with other pathogens. **GT**

Photo: Nicole Cappello

TECHNOTES

The 2005 *U.S. News* undergraduate rankings once again confirm Georgia Tech's high-quality performance in many academic categories. "We're especially proud of our ability to maintain an elite status among public universities during a time when our state funding has decreased," says Provost Jean-Lou Chameau.

Georgia Tech in Top 10 Among Public Universities

For the seventh consecutive year and the eighth time in the past decade, *U.S. News & World Report* has ranked Georgia Tech as one of the top 10 public universities in the nation. Tech was ranked ninth among the nation's top public universities for undergraduates and 37th among all of the American universities, up four slots from last year.

"Over the past decade Georgia Tech has shown the consistency in performance that reflects the quality of this institution," says Provost and Vice President for Academic Affairs Jean-Lou Chameau. "I'm pleased to see that excellence continue, despite the challenges that we face in today's competitive higher education marketplace."

The College of Engineering held steady with a ranking of sixth, while the biomedical engineering program climbed two slots to fourth.

Five Tech engineering programs were ranked in the top five among specialty areas. For the third year in a row, Georgia Tech's co-op program was ranked one of 12 "Academic Programs to Look For."

"Our engineering programs continue to maintain the highest standards," Chameau says. "Biomedical engineering made a significant improvement, while the other programs continue to receive high marks. While such rankings certainly cannot convey the depth and breadth of the high-quality education Georgia Tech provides, it is nonetheless quite gratifying to have our ongoing efforts recognized."

Georgia Tech continues to have some of the most generous alumni in the nation. *U.S. News & World Report* said the percentage of Tech graduates contributing to the Institute is the highest among any public university in the top 50.

>>>





TECHNOTES>>>

>>>TECHNOTES

Technology Enterprise Park Planned

An 11-acre technology enterprise park developed by Georgia Advanced Technology Ventures Inc. in cooperation with Georgia Tech will be built on North Avenue.

"It will fill a big gap in the technology and economic development cycle for businesses in Atlanta

and the region," says Scott Levitan, executive director for real estate development at Tech, noting that the Institute is not developing the project.

As fledgling companies leave an incubator like Tech's Advanced Technology Development Center, they often require specific facilities but don't have the capital required to finance such needs. Bioscience companies that need specialized labs and clean rooms are particularly hard-pressed to find suitable office space.

"There is a significant need for flexible laboratory space that can be easily and quickly fit out for emerging and established technology companies," Levitan told the *Atlanta Business Chronicle*. "It's not easy for the commercial market to meet these needs because the cost of the space is high due to the laboratory use. Start-up companies have challenges in meeting the credit requirements of most commercial development lenders."

Having space readily available gives Georgia an edge over other states attempting to lure the companies. "We want Technology Enterprise Park to be a successful partner in Georgia's plan to support efforts that will result in the continuing economic success of the region," says Levitan.

Georgia Tech Graduates Most African-American Engineers

Georgia Tech is the top producer of African-American engineering graduates at both the undergraduate and master's degree levels, according to rankings from *Black Issues in Higher Education* magazine's annual college rankings report.

Tech was ranked No. 1 in bachelor's degrees awarded to African-American engineering students for the 2003-04 school year with 126 degrees, up from No. 2 last year. Tech remained on top for master's degrees awarded to African-American students in engineering, rising to 34 degrees from 31 in 2002-03.

In engineering PhD degrees awarded to African-American students during the 2003-04 school year, Tech rose to No. 1, up 700 percent to 16 graduates from two graduates previously.

The *Black Issues* rankings are considered by Georgia Tech to be an important tool to measure the success of campus diversity endeavors.

"These rankings confirm Georgia Tech's strong commitment to attracting and graduating minority students in engineering and science. We are proud of Georgia Tech's role as a national leader in creating and maintaining a supportive educational environment for minority students."

— Wayne Clough
Georgia Tech President

Million Dollar Math

A multi-institutional team led by Tech mathematics professor Konstantin Mischaikow has received a \$1.13 million award from the Department of

Energy for mathematical research into production of clean energy, pollution cleanup, manufacturing of ever-smaller computer chips and nanomaterial development.

"Materials produce geometric patterns that change over time in very complicated ways," Mischaikow says. "This complexity makes it difficult to keep track of and interpret those changes using standard techniques. Homology is a mathematical tool that allows us to quantify these patterns and in the future perhaps even help control the geometric structures.

"Take drug delivery, for example. A pill delivers





Novel Dedication

Best-selling forensic crime author Kathy Reichs surprised Georgia Tech alumnus James Woodward, retiring chancellor of the University of North Carolina-Charlotte, by dedicating her novel "Crossbones" to him.

Reichs is an adjunct professor of anthropology at UNC-Charlotte and has used the campus as a setting in her novels. She thanked Woodward, AE 61, MS AE 62, PhD 67, for his support over the years and gave him a black leather

jacket decorated with crossbones. Reichs also works as a forensic anthropologist for the chief medical examiner in both North Carolina and the Canadian province of Quebec. She is a frequent expert witness in criminal trials.

Woodward served as chancellor of UNC Charlotte from July 1, 1989, until his retirement June 30. Prior to his appointment as the third chancellor of the university, he worked at the University of Alabama at Birmingham, where he was a professor of engineering and dean of the School of Engineering.

James Woodward is decked out in the leather jacket Kathy Reichs gave him for a ride with the author on a borrowed Harley.

an active ingredient, but the release occurs when the pill surface dissolves. To control the delivery rate of the drug, you have to control the size and shape of the cavity holding the drug so it dissolves uniformly."

Tech physics professor Mike Schatz and Mischaikow will collaborate with researchers from George Mason and Florida Atlantic universities in the three-year project.

Dental Technology Center Probes Tissue Regeneration

Georgia Tech is collaborating with the Medical College of Georgia on tissue regeneration to treat facial deformities. Prostheses made from plastic or silicone can enhance functioning and quality of life, but they are imperfect and generally require ongoing refinements.

The Georgia Tech Dental Technology Center is applying expertise in geometry, engineering and computer technology to make it possible to reconstruct parts of the face with living tissue.

Using technology called anatomically accurate reproducible transfer, an oral surgeon can glean exact measurements to reconstruct or create facial structures. A computer then uses those measurements to create dental casts and other artificial structures.

It's possible for the surgeon to use the casts to spur new tissue growth.

"We're moving toward regeneration through tissue engineering," says George Schuster, associate dean of research in the Medical College of Georgia School of Dentistry. "The casts can either be seeded with cells or simply implanted and allowed to be slowly absorbed by natural tissue and replaced by natural material.

"The idea is to rehabilitate patients to a state of normalcy."

>>>

>>> **TECHNOTES**

Green Chemistry

A new class of solvents with key properties that can be rapidly changed by the introduction of a common gas could provide a more environmentally friendly way of producing specialty chemicals.

The findings are the result of work by a research team from Tech and Queen's University in Canada.

Team members Charles Liotta, Tech vice provost for research and graduate studies, and Charles Eckert, director of Tech's Specialty Separations

Center, say the process could cut costs, reduce pollution and speed chemical processing.

Eckert and Liotta were recipients of 2004 Presidential Green Chemistry Challenge awards for their collaboration in developing benign tunable solvents that couple reaction and separation processes.

Green chemistry refers to the development of chemical processes and products that reduce or eliminate the use and generation of hazardous substances. This type of chemistry seeks to reduce and prevent pollution at its source.

Tech's new solvent process promises to move the chemical industry another step closer to a "green chemistry" that reduces pollutants and protects the natural environment.

Paul, John, George, Ringo — and Duke

It was 40 years of yesterdays that Duke Mewborn helped the band to play.

The British invasion in the summer of 1965 was heralded with so much screaming from delirious young women that the Beatles needed a little help from their friends. A hard day's night when the boys from Liverpool played Shea Stadium in New York, they couldn't hear each other play or sing over the twisting and shouting.

The Beatles were set to perform at Atlanta's Fulton County Stadium

three days later, Aug. 18. Mewborn, Cls 56, was president of Baker Audio, which provided sound equipment for the stadium. The Beatles saw him standing there and asked for help, they needed somebody.

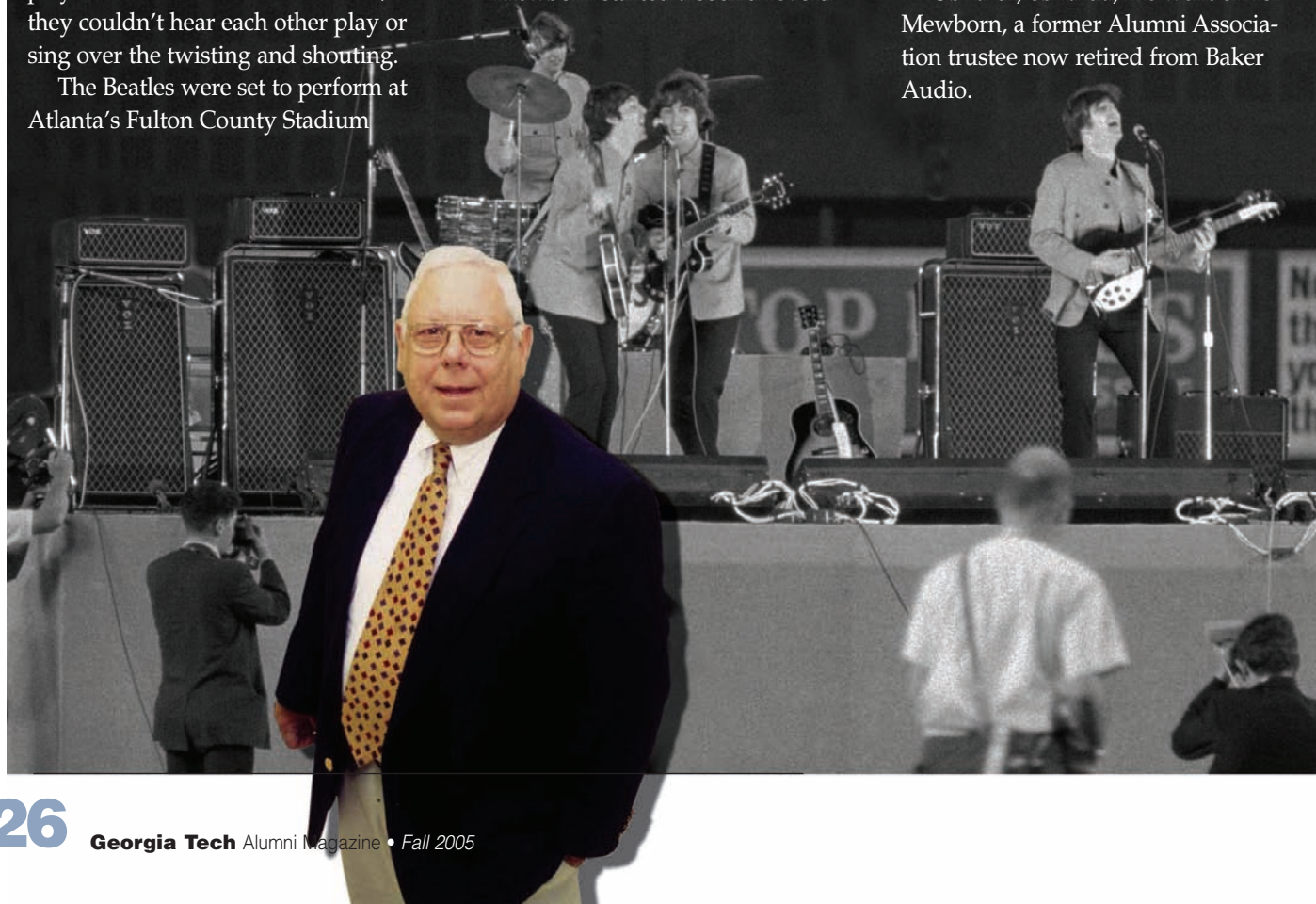
"The Beatles were at second base when they performed and second base in the round stadium was almost the center of the field, which meant that all sound going out came right back in. So they would hear a lot of echoes," Mewborn says.

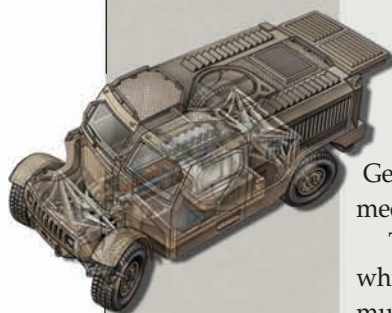
Mewborn started a sound revolu-

tion by putting a monitor in front of the stage so the Beatles could hear themselves. He monitored the sound from the press box. Paul, John, George and Ringo appreciated the work so much that they sent their manager to ask Mewborn to accompany them on the long and winding road as their soundman throughout the remainder of the American tour.

Mewborn declined. He was going nowhere, man. He had a business to run.

Ob-la-di, ob-la-da, life went on for Mewborn, a former Alumni Association trustee now retired from Baker Audio.





The Marine Corps is working with Georgia Tech Research Institute engineers to design not one, but two vehicles — the ULTRA AP (below) and the ULTRA 3T — that are stronger, faster, safer and more efficient than today's military vehicle, the 1970s-designed Humvee.

Designing the Ultimate Mule

Georgia Tech researchers are helping design a mechanical mule that would do NASCAR proud.

The versatile and dependable military Jeep, which gained fame as the original mechanical mule in World War II, was succeeded in the 1970s by the Humvee, which has become outdated.

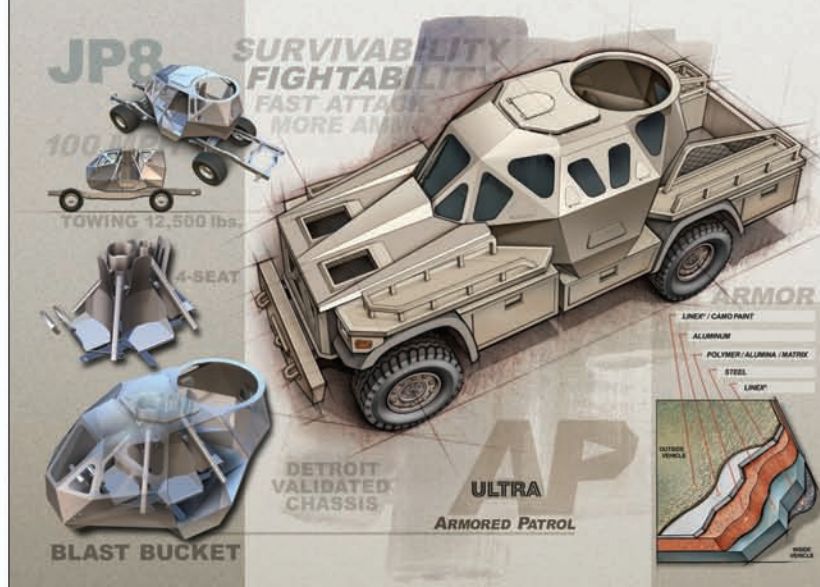
Mike Dudzik, a GTRI technical fellow, says Tech is partnering on the project with senior automobile engineers who have designed high-performance vehicles for NASCAR.

A demonstration vehicle, the ULTRA AP (armored patrol), is being developed that emphasizes high-output diesel power combined with revolutionary armor and a fully modern chassis.

GTRI engineers are rethinking military vehicles from the ground up.

"The ULTRA design matches the best current commercial automotive technology coupled with NASCAR experience, novel design concepts and research advances in lightweight armor to maximize fightability and protection," says Dudzik.

The ULTRA's hybrid engine — combining diesel and electric power — will not only aid power generation, but offer a silent electric mode when stealth is needed. Moreover, the new engine will make the mule-of-the-future more responsive and, pound for pound, develop about twice the horsepower of the Humvee's 1970s engine. An unloaded ULTRA should go from zero to 60 miles an hour in 4.8 seconds.



TECHNOTES>>>

Statement of Ownership: September 2005

Management and Circulation (Required by 39 U.S.C. 3685)

Georgia Tech Alumni Magazine

Publication No. 1061-9747

Frequency: Quarterly

No. of issues published annually: Four

Annual subscription price: \$10

Publisher—Joseph P. Irwin, 190 North Ave., Atlanta, GA 30313

Editor—John C. Dunn, 190 North Ave., Atlanta, GA 30313

Managing Editor—Neil McGahee, 190 North Ave., Atlanta, GA 30313

Owner—Georgia Tech Alumni Association, 190 North Ave. NW, Atlanta, GA 30313

Known bondholders, mortgagees and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: None
Tax Status. The purpose, function and nonprofit status of this organization and the exempt status for federal income tax purposes: Has not changed during the preceding 12 months.

Extent and nature of circulation

	Average No. Copies Each Issue During Preceding Mos.	Summer 2005 Single Issue Nearest to Filing Date
a. Total No. Copies (Net Press Run)	36,075	34,800
b. Paid and/or Requested Circulation		
(1) Outside-County Mail Subscriptions Stated on Form 3541. (Include advertiser's proof and exchange copies)	29,408	27,900
(2) Paid In-County Subscriptions (Include advertiser's proof and exchange copies)	None	None
(3) Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Non-USPS Paid Distribution	None	None
(4) Other Classes Mailed Through the USPS	None	None
c. Total Paid and/or Requested Circulation (Sum of 15b (1), (2), (3), and (4))	29,408	27,900
d. Free Distribution by Mail (samples, complimentary, and other free copies)	None	None
(1) Outside-County as stated on Form 3541	None	None
(2) In-County as Stated on Form 3541	None	None
(3) Other Classes Mailed Through the USPS	None	None
e. Free distribution outside the mail (carriers or other means)	6,127	6,360
f. Total Free Distribution (Sum of 15d and 15e)	6,127	6,360
g. Total Distribution (Sum of 15c and 15f)	35,535	34,260
h. Copies not distributed	540	540
i. Total (Sum of 25g and h)	36,075	34,800
j. Percent Paid and/or Requested Circulation	81.5 percent	81.4 percent

This statement of ownership will be printed in the Fall 2005 issue of this publication

I certify that the statements made by me above are correct and complete.

Joseph P. Irwin
Publisher

>>> **TECHNOTES****Burdell's
Latest
Assignment**

Somehow between his hundreds of classes, extracurricular activities and jobs, George P. Burdell still finds time to read — and critique — popular fiction.

His review of Tom Clancy's "The Bear and the Dragon" is posted on the Nexus Reviews Web site. According to the reviewer profile, "George is a freshman at Georgia Tech in Atlanta. George is studying chemical engineering."

Hmm, we thought he was studying architecture. Or was it international affairs?

Regardless, Burdell has a way with words. "Time and again Tom Clancy's novels have been praised not only for their big-scale drama and propulsive narrative drive but for their cutting-edge prescience in predicting future events," the review reads. "In 'The Bear and the Dragon' the future is very near at hand indeed."

Burdell is a real Clancy fan and gives the book an 8.5 on a 10-point scale.

"Blending the exceptional realism and authenticity that are his hallmarks with intricate plotting, razor-sharp suspense and a remarkable cast of characters, this is Clancy at his best — and there is none better," he writes.

Perhaps Clancy should consider casting Burdell, a remarkable character in his own right, in his next novel.

**Roger Webb Joins Provost's Office**

Professor emeritus Roger Webb thought his work was done at Georgia Tech. He retired in 2004 after 40 years as a faculty member in the School of Electrical and Computer Engineering — the last 14 as the Steve W. Chaddick chair.

But he's back, filling a new role as special assistant to Provost Jean-Lou Chameau.

Describing him as "a talented, experienced and respected faculty member and administrator," Chameau asked Webb to serve as a liaison for faculty input on the Nanotechnology Research Center building, provide organizational focus for Tech's energy-related research and promote economic development and technology transfer.

"To play the leadership role to which we aspire in the nation and the world, energy must become one of Georgia Tech's major thrusts in education, research, service and economic development comparable to thrusts we made in bioscience, manufacturing and nanotechnology. Dr. Webb will serve a pivotal role in that thrust," Chameau says.

Saving Jobs, Sustaining Community

GTPAC stands for the Georgia Tech Procurement Assistance Center, but in the small town of Bowdon, Ga., it means a whole lot more.

The GTPAC staff, specifically Jerry Shadinger, helped Bremen-Bowdon Manufacturing Co. win a U.S. government award to produce combat and military dress uniforms and outerwear. The multi-year, multimillion dollar federal contract helps keep the company in business, along with the 400 jobs it provides in a town of 1,840, says Elizabeth Plunkett-Buttimer, co-chair and co-CEO of the business started by her grandfather in the late 1940s.

By teaching Bremen-Bowdon how to seek and secure government contracts, Tech helped the company "reinvent" itself, says Plunkett-Buttimer, who also serves as chair and CEO of a family-owned sister company, Bowdon Manufacturing Co.

While most textile customers now buy cheap imports, the U.S. government, by law, must secure a portion of its purchases from domestic sources.

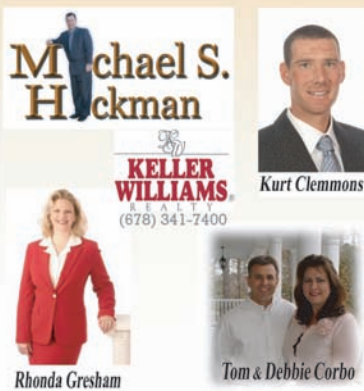
"This kind of economic opportunity means a lot to a small town," says Plunkett-Buttimer. "It's not numbers on a page, but people's lives." **GT**



Call a Ramblin Realtor® for
Gold-level real estate
service in metro Atlanta.

RamblinRealty.com

404.444.3446



**Buzz
by our
Web Site**



gtalumni.org

ALUMNIALMANAC<<<

75 Years Ago

Two long-standing Georgia Tech systems — the numerical method of grading and the “ancient basis of academic standing” known as equivalent hours — were abolished. Beginning with the fall 1930 academic year, Tech began using the alphabetical method of grading and the credit hour system. Under the alphabetical system, A was excellent, B above average, C fair, D barely passing, E conditional and F failure. The new system applied to the entire student body, including co-ops and evening students.

50 Years Ago

Several days after Georgia Tech accepted a bid to play in the Sugar Bowl, Georgia Gov. Marvin Griffin demanded the Yellow Jackets refuse to play the University of Pittsburgh in the New Year's Day football game because Pitt had an African-American player. It made national headlines and Tech students marched to the state Capitol in protest, even hanging the governor in effigy [photo below]. The next day, Tech's campus received national coverage by news media and Tech students appeared on the “Today” show explaining that their protest was against political interference in the Sugar Bowl. Tech played in the game, defeating Pitt 7-0.

25 Years Ago

Ribbons were cut and spades turned earth on three memorable days in October 1980. Ground was broken to begin construction of the \$3 million College of Management, now part of the Industrial and Systems Engineering Complex, on Oct. 24; legendary football coach Bobby Dodd called the Oct. 25 groundbreaking for the \$5 million Arthur B. Edge Jr. Intercollegiate Athletic Center “the greatest thing to happen at Georgia Tech since someone wrote the Ramblin' Wreck song;” and the \$2.5 million west wing of the College of Architecture was dedicated on Oct. 26. **GT**



The Road Less Traveled

While still a boy, Gene Espy pedaled solo on a 740-mile bicycle trip. As a Georgia Tech student, Espy hitchhiked through 11 states by himself. As a ramblin' man, Espy walked the Appalachian Trail alone.

By Kimberly Link-Wills

Photography by Gary Meek

Gene Espy gazed out from atop Maine's Mount Katahdin on Sept. 30, 1951, as the second person ever to hike the entire Appalachian Trail in a continuous thru-hike.

"I knelt down and said a prayer of thanks to God for watching over me and allowing me to make the hike," Espy, IM 50, wrote in a compilation of hikers' narratives published in 1975.

Today, at 78, Espy's memory is as clear as the mountain skies were that day more than half a century ago. He sits in his Macon, Ga., home with his hiking gear in a box at his feet. Eugenia, his wife of 51 years, sits nearby, still entertained by the stories she no doubt has heard hundreds of times.

When he set out from Mount Oglethorpe in Georgia on May 31, 1951, Espy had no idea his name would be woven into the Appalachian Trail's history. He had never heard of Earl Shaffer, who walked the entire south-to-north trail in 1948. Espy didn't learn the importance of his own feat until he encountered a farmer along the trail in Virginia.

"He said, 'Son, if you get to Maine, you'll be the second one to hike the trail.' I said, 'Whatcha mean?' He said someone had hiked it three years before. I thought it had been hiked lots of times," Espy says.

He did know the world's longest wilderness footpath,



begun in New York in 1922 and completed by the Civilian Conservation Corps in 1937, was not well traveled at the time. Sometimes he would go a week without seeing another human being. He just kept walking. There were many miles — more than 2,000 through 14 states — to go.

Espy got his first taste of the Appalachian Trail in 1945, when, as a Georgia Tech stu-

dent, he and a friend spent a school break hiking and camping in the Great Smoky Mountains. "I knew then I wanted to do it."

He ordered guidebooks and maps from the Appalachian Trail Conference, organized in 1925 to help lay out the path, and shoes and equipment from L.L. Bean, the Maine outfitter founded in 1912. "I quietly planned my hike," he says.

By the spring of 1951, the 24-year-old Espy was ready. He quit a job he didn't like but, ever the quintessential Southern gentleman, won't name the company. Although he knew beginning the journey at the end of May could make for scorching Southern days and bone-chilling Northern nights later on, he waited for a Scouting friend to get out of school so they could hit the trail together.

They stepped off from Mount Oglethorpe with backpacks weighing nearly 50 pounds and a two-man tent they planned on toting in turns. On the second day, Espy's friend feared his pack was too heavy and the trail too treacherous. He headed back to the young men's hometown of Cordele, Ga. Espy would spend the next four months alone. >>>



Cordele's first Eagle Scout, Espy knew always to be prepared before he set foot on the Appalachian Trail. In a piece he wrote for the *Appalachian Trail News* in January 1952, Espy said he carried a "lightweight down-filled sleeping bag, 35 millimeter camera, a quart canteen for water, small Primus cookstove, a pint canteen of white gas for fuel, pocketknife, spoon, small miner's carbide light, Band-Aids, Boy Scout cook kit minus the frying pan, toilet kit, plastic rain poncho, extra shirt, two T-shirts, extra leather shoelaces, sewing kit, small clothesline and the New Testament."

His two pairs of Navy-issued white trousers were ideal for his journey. Espy holds up one pair of his trousers, now a color that reminds one of mildew, yet perfectly preserved. Although the pant legs are tattered at the bottom, there are no holes. He knew the duck material wouldn't get snagged on trees and rocks.

The chambray shirt he wore didn't fare as well.

"Before I got out of Georgia, the sleeves were in shreds because of the thorny vines. The trail wasn't very well maintained. People didn't hike much back then," says Espy, who made a detour to the tiny town of Helen (before it was transformed into a reproduction alpine village) to buy a twill shirt.

The sleeves of the twill shirt did hold up. Like a magician revealing a rabbit, Espy twirls the shirt around to show the back, worn clean through in places from the straps of his backpack.

Taking a side trail before getting back on track in north Georgia, Espy stood at the foot of Amicalola Falls, alone, breathing in the pristine beauty and listening to the sounds of crashing water.

"Some people hike the trail because something bad happened. The first fella that hiked it was in the military service during World War II and his best friend got killed, so he was walking it to get over that. Some people walk it after they get a divorce or they get fired from a job," Espy says. "I was out to see God in nature."

Over a small gas burner, Espy cooked cornmeal with powdered milk and added sugar and raisins. He never killed an animal for food. And, according to a footnote in the collection of stories "Hiking the Appalachian Trail — Volume One" compiled by James R. Hare, "Gene Espy is probably the only hiker who ever walked the entire 2,000 miles of the Appalachian Trail without building a single campfire for any purpose."

Espy mailed supplies ahead to ease his load. Dehydrated potatoes were among the foodstuffs he became partial to and had waiting for him in post offices along the trail.

"When I'd cross a highway, I'd have to go one way or another down to where I thought the nearest town was to buy groceries. Every week I'd buy two loaves of bread and three jars of preserves, different flavors. When I'd get back to where the trail picked up, I'd make up these two loaves of bread into preserve sandwiches and I'd stack 'em back in the original bread wrappers," he says.

Espy supplemented his simple meals — and satisfied his sweet tooth — with Hershey bars. "I'd eat some of those between meals," he says, going silent for a moment to savor the memory.

"If I could go two or three miles off the trail to see a beautiful waterfall or something else spectacular, I'd go that way and have a look, then I'd retrace my steps," says Espy, who walked far more than the 2,025 miles credited to him.

During his 123-day trip, he took only six days off, mostly due to inclement weather when he had found a dry place to hole up. "I tried to make it to a shelter or a good place to camp every night. I averaged 17 miles a day. There were days I'd go 30 miles," Espy says.

"Things were cheaper back then," he continues. "The whole trip cost me about \$400. A hundred dollars of that was for equipment and paying my way back. I hitchhiked from Maine to Boston. That was about 500 miles. Then I rode the bus from Boston to Cordele."

Espy says he never got lonely on the trail, yet there were times the hiker was rattled.

"Tell the wildcat story," Eugenia urges.

Espy nods. "In Georgia, I came to this fire tower close to the mountain. It went 50 feet high

When I reached Deep Gap, N.C., I laid over a day during heavy rains, reading my Bible and resting in the lean-to. The next day I had beautiful weather as I hiked in the Nantahala Mountains, one of the most magnificent portions of the trail. From the fire tower on Standing Indian Mountain, the views in all



Springer Mtn.
Southernmost
Point of Today's
Appalachian Trail

CHATTAHOOCHEE
NATIONAL FOREST

Asheville

SOUTH CAROLINA
NORTH CAROLINA

NORTH CAROLINA

THOMAS
JEFFERSON
NATIONAL
FOREST



directions were extraordinary. About 12 miles farther along the trail I saw more grand views from Albert Mountain. I ended this glorious day at Wallace Gap, where I left the trail and hiked to the White Oak Bottoms lean-to. A forest ranger's house was nearby and I was his guest for a dinner of delicious mountain trout.

Gene Espy

Hiking the Appalachian Trail — Volume One

Mount Oglethorpe

1951 Trailhead of Appalachian Trail



and had a landing and a trap door. I climbed up to the landing and could see very clearly all around. The trap door was locked, so I went back down."

He decided to sleep on the porch of a locked forest ranger's cabin and made up a batch of chocolate pudding before settling in for the night. "I had my carbide light hanging on a nail and I was writing in my diary. There was all this noise out in the woods. It was wildcats carrying on, I guess about that pudding I had," he says, his eyes brightening.

"I got scared and I took my pudding and my backpack and my sleeping bag and I ran to the tower. It was hard to climb up with everything I was carrying, but I was only gonna make one trip up that ladder."

Once he climbed the ladder, however, Espy was faced with a dilemma. He was on a small platform 50 feet above the ground. The wildcats were 50 feet below. He used his belt and shoelaces to tie his sleeping bag — and himself — to the platform. Espy says he got a fine night of sleep — and protected his pudding.

"He's real good at improvising," Eugenia notes.

The couple began dating in 1949. Espy would mail her a letter when he'd come across a post office. Eugenia would answer by sending a letter marked general delivery to a town farther up the trail.

"I knew he was going to go all the way," says Eugenia. "There was never a doubt in my mind."

While Espy had confided in his girlfriend, he didn't fully confess his plans to his parents back in Cordele. "I didn't tell them I was going to hike the whole trail," he says.

They probably wouldn't have been surprised. Espy seems to have been born with a strong sense of wanderlust.

"When I was in the 10th grade, they taught us Spanish for the first time. I talked one of my buddies into riding our bicycles from Cordele to Mexico. About a week later his daddy heard us talking about it and said, 'No, sir.'"

Espy's parents couldn't talk their rambler out of a summer adventure. He pedaled off on his bike for a weeklong solo camping trip of 740 miles through Georgia, Alabama and Florida.

Perhaps the elder Espys had given up worrying by then. Their son already had made two trips down the Ocmulgee and Altamaha rivers to the Atlantic. On one, the teen-age Espy continued down the intercoastal waterway to Daytona Beach.

Espy wasn't so adventurous, however, when it

came to choosing a university. He simply followed his older brother, John Lee, ChE 44, to Tech.

Surely the younger Espy was gifted in math and science. "Nah, but I passed. I should have been studying instead of hitchhiking," he says, recalling his freshman year when a professor said the class would be reviewing trigonometry for a week. "I had never heard the word trigonometry."

Hitchhiking was Espy's favorite college pastime. "I joined a fraternity but I didn't like the drinking," he notes. "I'd hitchhike on weekends just for fun. One time I told some of my classmates, 'This weekend I'm gonna hitchhike from Atlanta to St. Louis and back.' They said, 'You can't do that,' and I said, 'Yeah, I can.'"

He took a circuitous route thanks to the truckers and businessmen who picked him up, but he did it — 1,600 miles and 11 states. "I made it back for classes on Monday," he says, a grin stretching across his face. "I spent \$2.35."

The way Espy tells it, when he wasn't hitchhiking away from campus, he was pulling practical jokes on campus. He once dangled a friend's bicycle outside his third-floor window at the YMCA, now the Alumni/Faculty House.

Espy, who played the clarinet in the Tech marching band, relates another story illustrating his jocular nature. The drum major told musicians in the front row of the band to pass back the name of the next song. Espy, midway back, told those behind him a different tune. "The band played two pieces at one time," he says, still amused at the prank he pulled off on Rose Bowl Field.

He also finds delight in fictitious reports he has read about his Appalachian Trail journey. When he arrived at the end of the trail in Maine, a forest ranger alerted the local media.

"The ranger told the reporter, 'Here's this fella that hiked all the way up from Georgia.' She said, 'You must have lost some weight.' I said, 'Yes, ma'am, I lost some weight.' She said, 'How much did you lose?' I said, 'I don't know.' She said, 'How much did you weigh when you started out?' And I told her. The next thing I knew I picked up the newspaper and it said I'd lost 28 pounds," Espy says chuckling.

When asked whether he in fact killed 20 rattlesnakes as reported in one publication, he leans back in his chair and says, "Well, it was between 15 and 20."

He pulls himself up and takes down his walking stick from its place of honor on a wall in his home. He has had the stick, species uncertain, since he picked it up off the ground as a >>>



12-year-old Boy Scout. "It was about this high when I started out," he says, holding his hand several inches above the top of the stick. "Somebody said, 'What, did you wear it out?' I said, 'Nah, I didn't wear it out.' I was on a mountain in North Carolina called Big Bald — the reason they called it Big Bald was because no trees grew on top of it."

Once Espy was done admiring the view from atop Big Bald, he tried to find where the trail picked up in the trees that clung to the side of the mountain.

"I was knocking the weeds back and about stepped on a rattlesnake. He coiled up and I backed up slow to be sure I didn't step on his brother," he says, an impish grin on his face. "I came down — whap — and hit him in the head

pretty hard but didn't quite kill him. It broke off my stick at an angle. Then I finished him off and took my knife and rounded off the sharp point."

Looking down at the stick he has kept for more than 65 years, he says quietly, "It was a big help. When I would cross streams, sometimes I'd step on big rocks and this would give me balance. It would help me push off to climb steep places."

Espy returns the walking stick to the brackets that hold it on the wall and moves on to his socks.

"I had two pairs of socks, Wigwam athletic socks." For demonstration, he has a brand new pair sealed in plastic Wigwam packaging. He holds up one of the actual pairs of socks he wore, surprisingly without holes, but dyed a dull green by 2,000 miles of grass stains.



"I always washed my socks and my feet each night. I tied the wet pair on the outside of my backpack to dangle them dry the next day while I hiked," he says.

Espy's socks had plenty of time to dry, particularly on days he got lost. Sometimes the 2-by-6-inch white trail markers were impossible to find and, on at least one occasion, his guidebook was wrong. Sometimes Espy deliberately left the trail and reconnected with civilization.

When crossing Skyline Drive in Virginia, Espy came across an upscale resort. Despite his bearded face and trail-worn clothing, the lure of a hot meal was too great to resist. "I went to the back door because I looked

out of place and asked about getting a carry-out meal," he says.

The manager, surmising a hobo was on the premises, slammed the door in Espy's face.

"There was a big hush" when the undaunted hiker walked through the front door to dine with the tourists. The account of the story he wrote for "Hiking the Appalachian Trail" says, "I had the same feeling the good cowboy must have when he enters the saloon where the bad guys hang out. However, I was too hungry to let it bother me. I put my pack on the floor near my table, ordered a nice dinner and enjoyed it very much."

Back in those days most young men who'd been raised right didn't sport whiskers and, as comical as it may sound today, Espy had >>>

planned on shaving every day in the wilderness.

When his friend abandoned the journey, however, Espy was forced to lighten his load and get rid of all nonessentials. His shaving kit was among the items mailed home to Cordele.

His appearance threw off many a person. Sometimes his traveler's checks were rejected like foreign currency and he once was turned away when he tried to get his hiking shoes sewn up. "The shoe repair man said, 'I don't have time to fool with you,'" Espy remembers.

Of course he encountered plenty of hospitable people too. Espy spent a handful of nights in farmers' barns and, because of a fortuitous meeting with the police chief in Damascus, Va., slept in the town jail.

"The bed was attached to the wall with chains just like in the movies," Espy says.

The police chief also owned the town diner. The chief was so impressed with the young man's goal of hiking the trail that he drove him around town in his squad car before offering him the jailhouse bed. The next morning Espy was treated to a breakfast of "six eggs, two orders of ham, toast, a pint of milk and two waffles."

Years later Espy returned to Damascus to pay a visit to the man who had been so kind to him. He was saddened to learn the chief had been killed in the line of duty just one week earlier.

A Boy Scout Espy met also did him a good deed. Espy visited with the troop camping along the trail in Massachusetts.

"Tupperware was just coming out at that time. One of those boys had this Tupperware container and I admired it," Espy says, holding up a pitcher with the burp and seal lid that made the company famous when it was launched in 1946. "He insisted I take it with me. It was good for making up powdered milk."

Tupperware also attracted a critter.

"I was in Vermont sleeping on the ground and I woke up during the night to the sound like a cat lapping milk out of a saucer. I shined my light and I saw a raccoon. He had come up and tipped over this container of milk and loosened the lid and was lapping up that milk," Espy says.

His face lights up as he remembers the bear cubs he saw in Virginia. "I had crossed the James River and I sat down to rest. I heard some rustling around in the leaves right behind me. I looked through the bushes and there were these two bear cubs. They saw me about the time I saw them. The first cub went up to a limb. The second little cub

went up about waist high and just looked at me." Neither cub nor man had experienced anything of that nature. They eyed each other for a few minutes before Espy high-tailed it on up the trail before Mama Bear came looking for her babies.

It was the deer Espy fed in Maine that resulted in a photograph sent out over the Associated Press wire. After finishing his hike, Espy began to rid himself of his rations. He emptied leftover sugar and raisins into his hand and held it out to a deer eyeing him from the edge of a stand of trees. The deer, somewhat tame from hanging out around a campground, ate from Espy's hand.

The reporter and photographer from the local paper arrived on the scene shortly thereafter. While the photographer was setting up his tripod, Espy was watching the deer. He again extended his hand and the deer again licked Espy's hand but scampered back into the woods when it discovered there was no more sugar to be had.

The photographer preserved the moment the deer touched the hiker's hand. It's an image now painted on canvas and hanging on a wall of the Espy home.

Espy had no idea the folks back in Cordele would get wind of his arrival in Maine so soon. "My family was of average means. We didn't use long-distance telephone. I sent them a 1 cent postcard. Meanwhile, unbeknownst to me, the news reporter and photographer sold the story and picture to the Associated Press."

A woman in Cordele heard the news on the radio and called the Espy family. Eugenia read of the completion of the journey in an Atlanta newspaper.

The local Chamber of Commerce in Maine invited Espy to speak at a banquet before he hit the road again. "I was gonna send my backpack home by railway express and I bought a suit and tie and white shirt, but the man from the Chamber of Commerce wanted me to wear my trail clothes and not shave or anything," he says.

Espy realizes today that he could have been fatally injured any number of ways along the Appalachian Trail and months could have passed before his remains were found. Yet the only injury he recalls occurred when he tried to climb a cliff for a panoramic view. The handhold in the rock gave way and he and "a small avalanche" tumbled down to the ground several feet below.

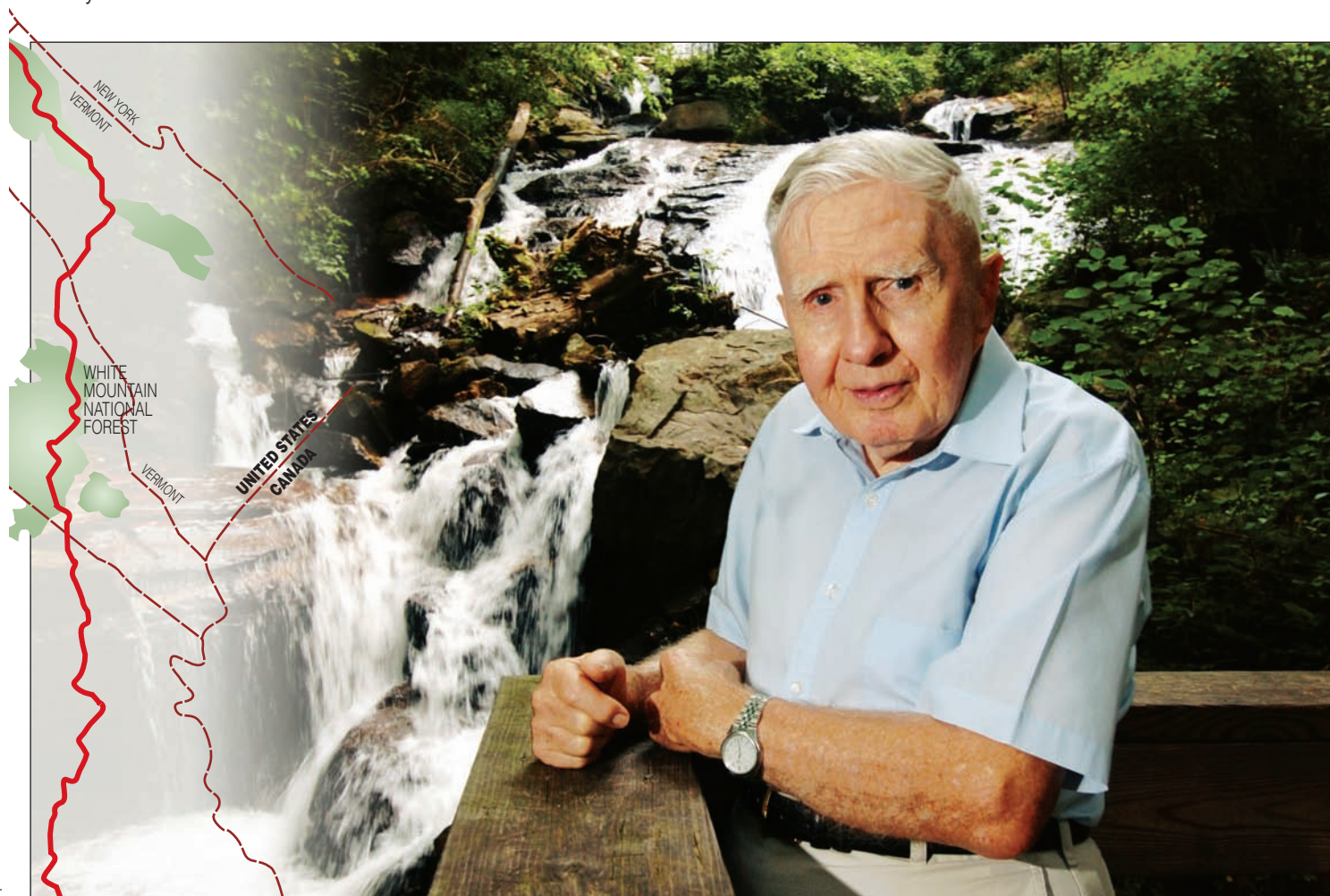
"Blood was coming out of my arm, but you know what I did first?" he asks, with another big grin. "I listened to see if my watch was ticking."



A young Georgia man

has been spending the summer plodding northward over the Appalachian Trail. A few days ago he arrived at Millinocket after reaching the summit of Maine's highest mountain. In 123 days he walked 2,025 miles, wore out three pairs of shoes, killed 15 rattlesnakes with his walking stick, grew a long beard and lost 28 pounds.

Albany



Mount Katahdin

BAXTER
STATE
PARK

He was the second man in history to cover the full length of the trail ... in one continuous effort. To those acquainted with the trail, it is a feat of endurance that stamps the young Georgian as a man of fortitude and courage. We take off our hat to Eugene M. Espy of Cordele, Ga. He set his sights on a distant goal and reached it.

Daily Sun
Lewiston, Maine,
September 1951

After his Appalachian Trail adventure, Espy settled down with Eugenia and raised two daughters, who now have a daughter each. But when he retired from Robins Air Force Base as an aerospace engineer in 1995, Espy hit the road again. "Eugenia drove me up to North Carolina. I hiked back to Springer Mountain, now the southern terminus of the trail. I was gone a week."

Espy, who is writing a book about his lifetime of adventures, still gives talks about his 1951 journey and "Hiking the Appalachian Trail" chronicles where he slept along the way as a guide for the thousands who have followed his path.

He was on hand for a recent Appalachian Trail Long Distance Hikers Association conference. The hundreds of people inside the auditorium were asked to stand if they hiked the entire trail in 2004. The speaker counted back 2003, 2002, 2001 and the number of people standing grew by dozens. No one stood up as the speaker counted back from 1970 — until he got to 1951. Espy, now the oldest living early thru-hiker since the death of Shaffer, stood to thunderous applause.

On this day Espy stands in the Amicalola Falls State Park visitors center. Some of his hiking equipment — the Army rucksack he bought at a surplus store after the war for \$5, his Boy Scout canteen, a pair of his trusty L.L. Bean shoes — is encased behind glass.

A video plays continually, a young Espy in a photo taken on the trail in Pennsylvania, an older Espy documenting his journey for a film crew.

Hikers who come in to the visitors center wonder why this gentleman holding an old stick is being photographed and his every word written down. They are told it's Gene Espy, the second person to thru-hike the entire trail. One by one they come over to shake his hand.

It's a quiet day at Amicalola, which receives about a million visitors each year. Espy hikes to a viewing platform beside the waterfall for a photograph. His white hair and stooped shoulders seem to be another one of his practical jokes.

Back in '51, nothing was here but trees, rocks and water. The tribute inside the visitors center seems fitting to the trailblazer gazing up at the waterfall he first set eyes on all those years ago. **GT**

Research du Jour

Georgia Tech's new Food Processing Technology Building is something to savor

By John Dunn

Photography: Christopher Gooley

Architects knew what ingredients Georgia Tech wanted in its new Food Processing Technology Building. It was up to them to create the recipe and cook up a masterpiece. Five months after the May 19 dedication ceremony of the \$7.4 million building that brought Georgia Gov. Sonny Perdue and industry leaders to campus, J. Craig Wyvill, chief of the food processing division for the Georgia Tech Research Institute, still savors the moment.

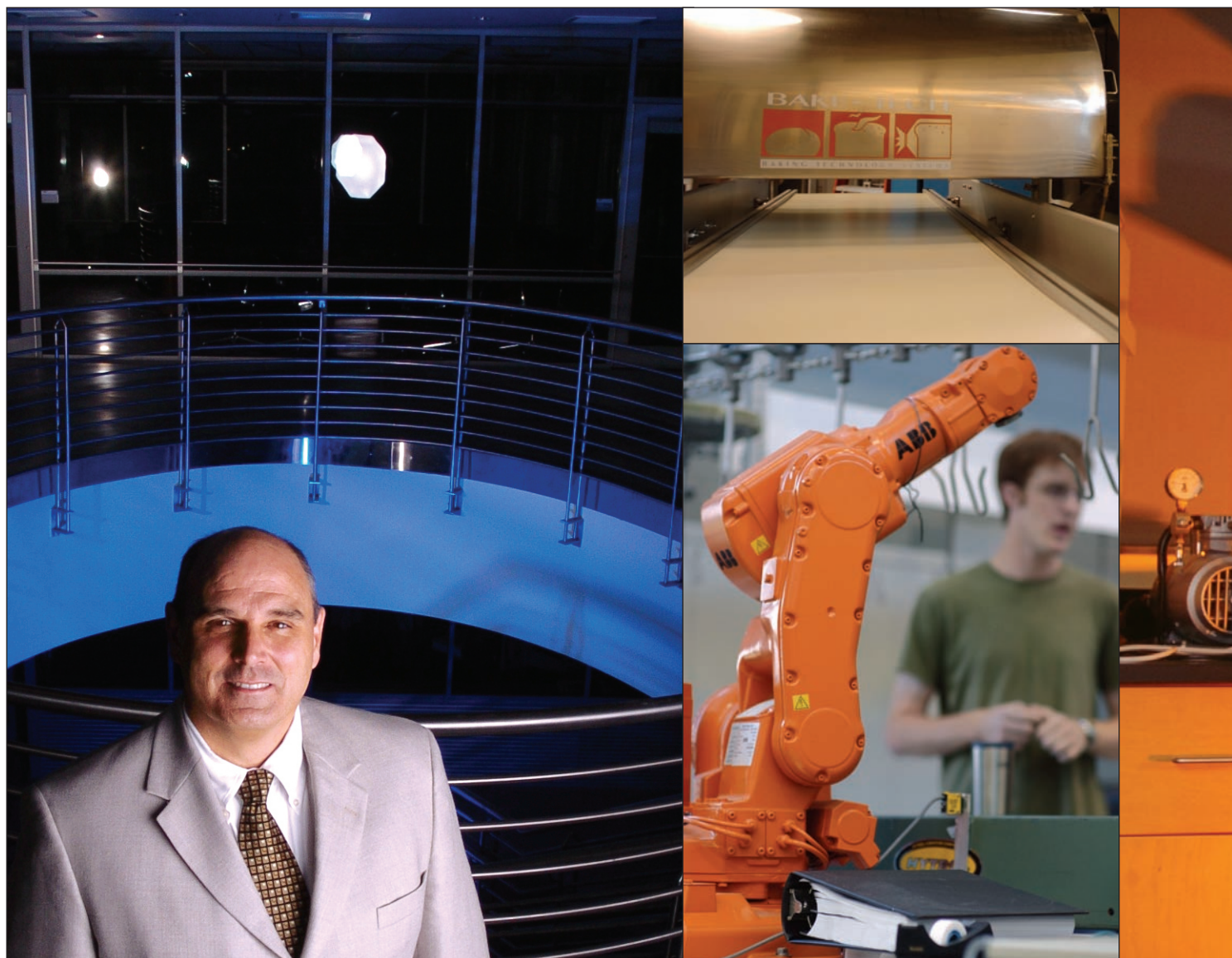
"This is a signature building," Wyvill says. "It has everything we wanted — a high-bay space with overhead crane, lots of natural light, high-tech labs. We had a lot of interaction with the architects. This has been a great experience for us."

Wyvill knew what he wanted, say architects Janice N. Wittschiebe, Arch 78, M Arch 80, a partner with Richard + Wittschiebe, the project architects, and Howard S. Wertheimer, Arch 81, M Arch 85, a principal with Lord, Aeck, Sargent, which led in the schematic design and laboratory planning process. Their firms collaborated in the design and planning of this state-of-the-art research building. >>>

Architect Janice Wittschiebe stands above the high-bay work area in the Food Processing Technology Building.







Craig Wyvill (above left), chief of the food processing division for the Georgia Tech Research Institute, says the signature research facility has “everything we wanted — a

“A monumental building for its size,” the facility serves as a threshold to a new era in food processing research.

The 36,000-square-foot building is designed to be flexible, accommodating the research and development of new and emerging technologies for the food processing industry, Wyvill says.

The central feature is a 4,370-foot high-bay research area, Wittschiede says.

“Because the shape of the site is very linear, the building really developed around the high-bay research space.”

Wertheimer says that while Wyvill needed a

“flexible, adaptable high-bay environment that had natural light,” that also posed a problem.

“The design problem was how to get a space that large onto a site that had topographic challenges. It’s a very simple building organizationally. Having natural light was critical, having high-bay space with an overhead crane and being able to drive a flatbed truck into the building was critical and everything else was attached to the spine.”

In addition to offices

and research laboratories for automation and environmental technology, the building has a 48-seat auditorium, a large conference room and a lower lobby exhibit area. Another important design feature is what Wittschiede calls the “wow factor” — the appeal of a signature building.

Although the entrance is on Strong Street, it also flanks North Avenue and Northside Drive. It has a very public exposure.

“It’s visible almost 180 degrees because it is sitting



1 — a high-bay space, natural light, high-tech labs." Architect and alum Howard Wertheimer (above right) led in the schematic design and laboratory planning process.

on a corner. The back of the building is most visible if you're coming down Northside Drive. It was a challenge to make the back of the building such a centerpiece. And the front had to have a significant signature," Wittschiede says.

"It's a monumental building for its size," Wertheimer agrees.

Wyvill's division does advanced research for the Agricultural Technology Research Program, one of the

country's leading programs, and Georgia's Traditional Industries Program for Food Processing, which is managed through the Food Processing Advisory Council and is known as FoodPAC.

ATRP works with Georgia agribusiness, especially the poultry industry, to meet specialized needs and develop advanced technology. FoodPAC strives to make Georgia's food industry more competitive.

At the building dedication Gov. Perdue said, "Innovations are making

lives better and moving industry forward. This facility will be a great place to develop the future of food processing and test prototypes of products that people will want and will help Georgia grow jobs in the value-added agricultural fields."

Wyvill says the facility "marks the start of a new era for Georgia's food processing research activities. The building is expected to serve as a cornerstone for multidisciplinary research and development that creates innovative

new technology designs for the food industry."

The building is the first new GTRI facility to be built in more than 20 years and marks the completion of the first of a two-phase construction project.

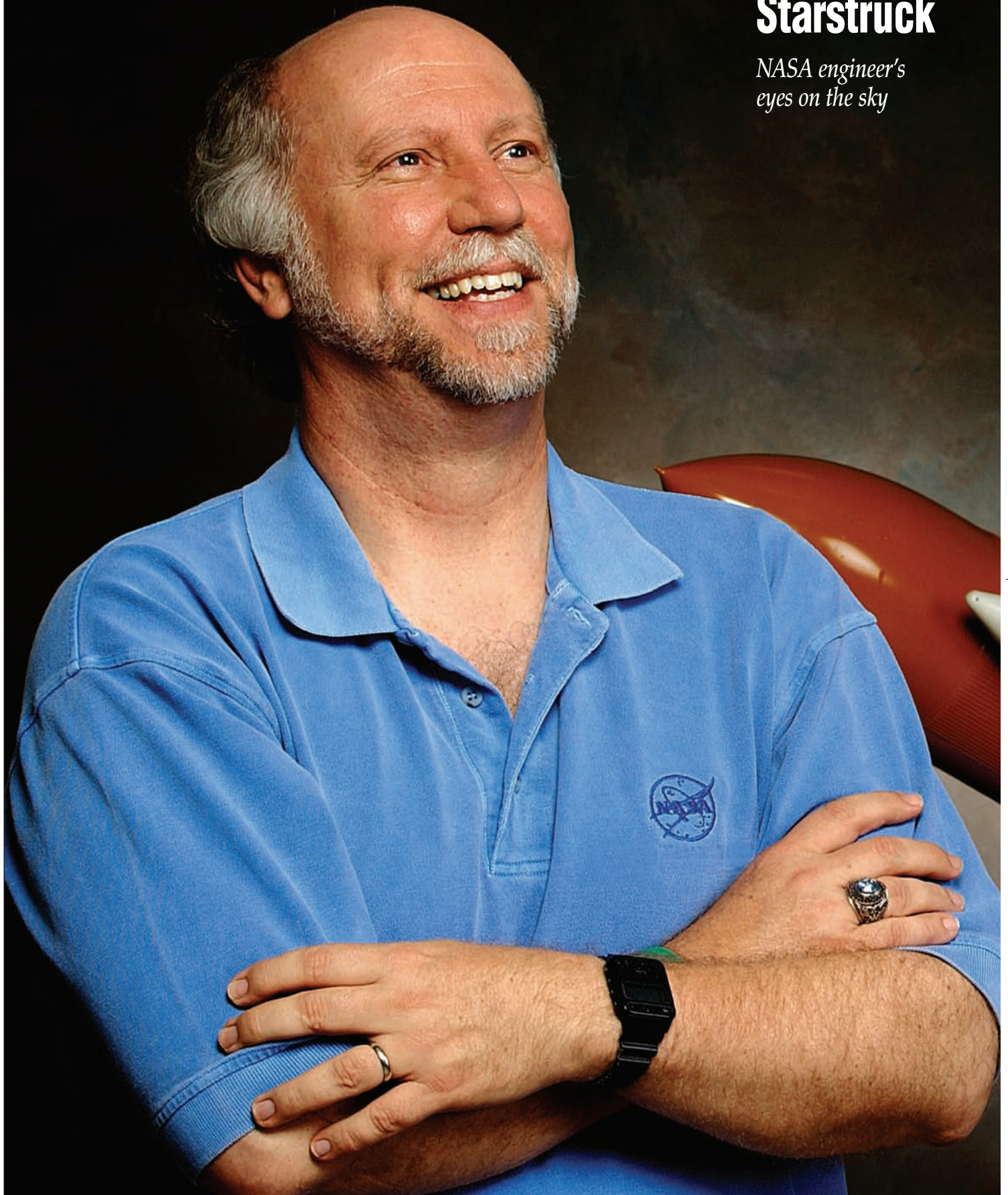
Wyvill says a drive has begun to raise \$2.1 million to build the second phase, which would add 10,000 square feet for offices and laboratories for food safety and bioprocessing research.

The future of food process research will be cutting-edge, Wyvill says. **GT**

>>> **PACESETTERS**

Starstruck

*NASA engineer's
eyes on the sky*



John Chapman, chief engineer for space shuttle propulsion at NASA's Marshall Space Flight Center in Huntsville, Ala., has his head in the clouds.

"What's always been most fascinating to me is the simple challenge of flight — persuading a chunk of metal anchored by gravity to fly into the sky," says Chapman, IE 73.

"Look at the concepts we're developing today. Imagine the possibilities we'll think of tomorrow."

Chapman is adept at finding solutions — and imagining possibilities. He leads a team of engineering experts and provides technical recommenda-

tions about flight hardware and program issues to the shuttle propulsion program manager.

For Chapman, a 25-year NASA veteran who has been involved with the shuttle since its development, his current job is the culmination of a love affair with flight that reaches back as far as he can remember.

An avid model builder even today, he quickly tired in his youth of purchasing tiny jars of model airplane paint and inquired about bulk supplies of the real thing at a general aviation airport in his hometown of Spartanburg, S.C. "Somehow I ended up with a job," Chapman recalls.

He worked at the airport

throughout high school and college, eventually learning about aircraft mechanics and electrical systems well enough to install hardware in private planes. He spent every spare moment — and most of his earnings — taking flying lessons. He earned his pilot's license on July 15, 1969, the day before Apollo 11 left Earth carrying the first human beings to walk on the surface of the moon.

Flying is integral to his life, Chapman says. Over the years he has owned a small plane and two lightweight gliders. He co-founded the Huntsville Soaring Club for glider enthusiasts and even proposed to his wife, Cindie, a chemist in the Materials and Processes Laboratory at Marshall, while soaring high over the green hills of east Tennessee.

In 1981, Chapman was writing computer programs at the Marshall Center to analyze

propulsion hardware. NASA was preparing for the shuttle's maiden space flight.

Chapman convinced a group of fellow Marshall engineers that they should witness the first shuttle launch. They borrowed an old motor home from a car dealer and hit the road.

It wasn't Chapman's first road trip. Ten years earlier he had traveled with his father from South Carolina to Cape Canaveral to watch the launch of Apollo 15. In 1972, he and a Tech roommate snagged VIP passes to the Apollo 16 launch.

Chapman has never forgotten the experiences. "We've all come a very long way since then," he says. "But the journey isn't over yet."

Where to next?

"Pick a destination,"

Chapman says and points to the sky. **GT**



The Game's Afoot

Digital
Media
Comes
Of Age





At Georgia Tech, a group of interdisciplinary faculty and students are applying serious study to electronic games. The technology exists to create and transform digital media into a powerful means of human expression. The collective task is to invent new formats and genres equivalent to books, newspapers and magazines, movies and television series.

By Maria M. Lameiras
Photographs: Gary Meek

The development of interactive games and the Internet allows Frederic Pons and Audric Saillard, students from Georgia Tech Lorraine (above left) and a group of students from the National University of Singapore — home of Tech's dual degree in The Logistics Program-Asia — to play the same game at the same time as Wryen Meek (at left), in his dorm room on the Institute campus in Atlanta.

Photos: Ralph Benoit (Lorraine),
Courtesy National University of Singapore
and Gary Meek (Atlanta)

DIGITAL GAMES: An Emerging Genre of Entertainment and Education

Tech has drawn together a group of specialists who are dedicated to the theory and practice of digital media. By uniting them in one department, and enhancing collaboration from the colleges of computing, architecture and engineering, Tech has built an advantage over the programs of many other universities.

From the moment consumers were able to plug an Atari into the television set and play Pong in their own living rooms, computer gaming became a cultural phenomenon, joining films, literature and music in the entertainment milieu. In Georgia Tech's School of Literature, Communication and Culture, a group of interdisciplinary faculty and students are applying serious study to electronic games.

"Computer gaming is being taken seriously, even as a research interest, as the technology progresses into extremely sophisticated programs," says Michael Mateas, who holds a dual professorship in the School of Literature, Communication and Culture and the College of Computing.

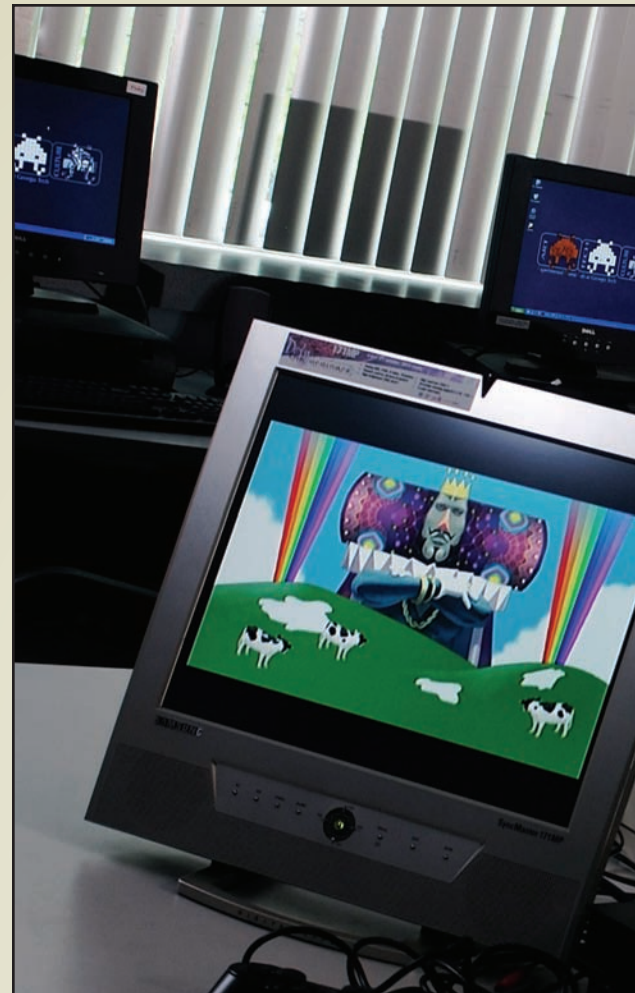
"Computer games are really becoming a mass phenomenon, not just something teen-agers do in their basements. In the 21st century, games will play the same role as films and books to give deep, cultural experiences."

Janet Murray, professor and director of graduate studies in the School of Literature, Communication and Culture, says the master's program in information design and technology is one of the oldest academic programs in the field, founded in 1993, and the PhD program in digital media is among the first worldwide. The new undergraduate program in computational media rounds out the offerings.

"Ours is a design program that is based on research. Our master's program emphasizes design and our PhD program emphasizes research, but they are deeply intertwined," says Murray.

"The way I think of it is that the collective task before people working in digital media right now is to invent the new formats and genres of representation, the equivalent of the newspaper, the movie, the TV series. We have the technology, now we have to create the structure that will allow us to make this into a powerful means of human expression.

"As a premier engineering school we have to teach our students how to ground their work in a way that will serve them when the particular interface design issues and technologies that we struggle with today are passe. The way we



approach that is to think of the creation of a particular artifact as part of the research into the larger project of extending the expressiveness of the medium itself."

Tech's Team Approach

While staying in touch with the industry, Murray says, Tech has its own research agenda. "We have the advantage of a mature curriculum and we have an even bigger advantage in the fact that we have a concentration of experts all in one department.

"Often in an emerging field the people who are working in that field are spread out over a number of disciplines and have to steal time from other commitments to contribute to the growth of the program," Murray continues. "Here we have a group that is dedicated to the theory and practice of digital media in one department and we have great collaboration from the colleges of



computing, architecture and engineering.”

LCC has had the good fortune of growing its program just at the time when interest in the field has been burgeoning, allowing it to attract productive and innovative researchers, Murray says.

Murray joined the faculty six years ago from the Massachusetts Institute of Technology, where she was leading research in humanities computing and teaching interactive narrative. She is the author of “Hamlet on the Holodeck: The Future of Narrative in Cyberspace,” one of the first critical studies of interactive entertainment and a work that has been widely read both by scholars and game designers.

Although games research is being done through the Wesley Center for New Media and the College of Computing at Tech, Murray says “games may be too narrow a word for what people are playing and making under that rubric.”

Tech is building a digital media program, she

says. “Research and design problems in information design today will be problems in game design tomorrow and vice versa. The interface work going on in games has much to teach us in other domains and games live in a digital community that includes many other forms of expression.”

Interactive games are often story-driven, but they currently reflect a very limited range of stories, Murray says.

“Most games are of the action/adventure genre, but the success of *The Sims* makes it very clear that there is a tremendous demand for story patterns that draw on domestic patterns rather than simply shooting and racing vehicles,” she says.

“As the medium becomes increasingly expressive, we can explore games and interactive stories that draw on the dramatic patterns associated with domestic comedy or with >>>

“Computer games are really becoming a mass phenomenon, not just something teen-agers do in their basements. In the 21st century, games will play the same role as films and books to give deep, cultural experiences.”

— Michael Mateas

DIGITAL GAMES: An Emerging Genre of Entertainment and Education

reconciling conflicts — patterns that engage more complicated human emotions.”

The Impact of Games

Academically trained in philosophy, literary theory and literature and professionally grounded in software technology and game development, LCC professor Ian Bogost says his academic and professional experiences combined to lead to his research interests in game criticism and studies.

“There are an increasing number of programs viewing game studies from a formal approach. They are still examining the medium to determine how to do game analysis and to determine what is a game,” says Bogost, who is writing a book, titled “Unit Operations: An Approach to Video Game Criticism,” which will be published by MIT Press next spring.

Another of his research interests is game rhetoric, or procedural rhetoric, which examines “how games influence people and their opinions,

Psychological Studies

Researchers explore video games' addictive pull, impact on behavior

Computer addicts often exhibit symptoms typical of gambling and shopping addictions including neglect of work or school, neglect of family, “lost” time due to engaging in the behavior and extensive costs related to their addiction, according to clinical psychologist Maressa Hecht Orzack.

Orzack, a member of the faculty at Harvard Medical School, treats addictive behaviors at McLean Hospital in Belmont, Mass., and is founder and coordinator of the Computer Addiction Service in Newton Centre, Mass.

“Computer use becomes abuse when it interferes with one's work or school, disrupts personal and family relationships and becomes increasingly necessary in order to feel good,” she says on her Web site, <http://www.computeraddiction.com>.

Treating computer addiction is much like treating an eating disorder, Orzack says.

“The basic approaches in treatment are to teach people how to normalize their behavior. Normalizing eating behavior is a key goal in treatment of eating disorders. Normalizing computer uses is more and more a requirement in our modern society,” she says.

Two conflicting studies address the impact of playing violent video games on children and youth.

The American Psychological Association in August called for less violence in video games and interactive media marketed to youth. Research shows negative influences of video violence on young people, the APA says.

Exposure to violence in video games increases aggressive thoughts, aggressive behavior and angry feelings among youth, according to an APA special committee on violence in video games and interactive media.

Studies on learning also show that active participation may influence learning more than passive observation.

“Violence in video games appears to have similar negative effects as viewing violence on TV, but may be more harmful because of the interactive nature of video games,” says Elizabeth Carll, a past president of the media division of the APA, in a news release. “Playing video games involves practice, repetition and being rewarded for numerous acts of violence, which may intensify the learning. This may also result in more realistic experiences which may potentially increase aggressive behavior.”

Conversely, a study released by a professor at the University of Illinois at Urbana-Champaign found that “players’ robust exposure to a highly violent online game did not cause any substantial real-world aggression.”

Dmitiri Williams, lead author of the study, is a professor of speech communication at the university and an expert on the effects of online video game play.

After an average playtime of 56 hours over the course of a month with a popular massively multiplayer online role-playing game, researchers found that game play was not a predictor of aggressive behaviors.

The study involved two groups of participants — a group of 75 players who had no prior massively multiplayer online role-playing game experience and a control group of 138 nonplayers. The participants ranged in age from 14 to 68, with an average age of 27.

“I’m not saying some games don’t lead to aggression, but I am saying the data are not there yet,” Williams says, conceding that the game studied represented “fantasy violence” and that other types of video games and contexts — such as featuring outer space or even everyday urban violence — might have negative impacts.

The APA has encouraged the entertainment industry to link violent behaviors with negative social consequences and also asked developers of violent video games and interactive media to address the issues that playing these games may increase aggressive thoughts and behaviors in children and adolescents.



“As the medium becomes increasingly expressive, we can explore games and interactive stories that draw on the dramatic patterns associated with domestic comedy or with reconciling conflicts — patterns that engage more complicated human emotions.”

— Janet Murray

including politics, advertising, education, health and medicine.”

In 2003, Bogost helped design an Internet-based computer game for former Vermont Gov. Howard Dean’s presidential campaign that demonstrated the grassroots political process by showing how one individual’s participation could have a significant impact on a campaign.

Although the campaign was unsuccessful — some people who played the game said it helped them understand how the campaign process works, but came away with the impression that Dean did not present a strong platform — Bogost says it was an important step for the medium.

“It became a moment when the serious practice of politics looked at the medium as viable to communicate in,” Bogost says. “I am looking at ways games can represent public policy problems and solutions and create conversations about those issues that aren’t happening because the issues are too dry or too complicated. This is a major development because when you look at research on young voters, they are increasingly ambivalent to the party process. Those affiliations haven’t been built up because a lot of young

people are looking for engagement on a deeper level.”

A Loss of Creativity?

This fall Bogost is teaching a graduate seminar on the issues of adaptation and translation in games, which addresses the trend of games developed as a tie-in with films or television programs.

“These games are expressions of the marketplace rather than creativity. One of the issues of film tie-in and adaptation is the tendency of the film industry not to share information, so even if game developers wanted to make a better game to tie in with the film, it is hard to get access to the script or other proprietary information,” Bogost says. “One of the things the industry must explore is, instead of looking at games from the marketplace strategy, to use a creative strategy.”

Bogost fears the new generation of video game consoles expected to hit the marketplace within the year will not help the creativity of the game industry.

“By and large, advances in technology seem to mean the genre will follow whatever the >>>

DIGITAL GAMES: An Emerging Genre of Entertainment and Education

Because of its power and influence, the potential of digital media as a teaching tool is beginning to be explored. Tech researchers stress that games are going to be an art form, "the cinema of the 21st century."

hardware will afford. This obsession with prettier pictures and visual fidelity without creative expression will result in games with more photo-realistic pea-brained monsters. This is not the only advance the industry can make," he says. "The production requirements increase and the budgets that go along with it will make it harder and harder to create something new and different."

Changing the Industry

The game industry also lacks what is prevalent in other art forms such as film — a thriving subculture of independent creators of content. "In part this is because of the cost-prohibitive nature of developing a game and in part it is because of the maturity of the medium. Anyone can make a film that they can output to the same physical medium and have distributed through alternative outlets. With video games, you can't just come up with something you can play on Xbox. Development kits and licenses have to be bought at a high cost from the game publishers," Bogost says.

In concert with the "serious games movement" arising in fields such as the military, health care and education, Bogost hopes Tech's approach of combining game design and development with game study will help change current industry mores.

"What we want our graduates to do is to go out and challenge existing conventions in the game industry. We want them to be technically competent to work on the hard problems in the industry and in research. But our graduates are not just skilled in tools. We want them to have something to say about the world," Bogost says. "The industry is stagnant in many ways. Our graduates are going to have to find their feet and figure out how to make progress in the industry."

Linking Design and Technology

Mateas, creator of Tech's Experimental Games Lab, questions why there isn't more interest in interactive stories in the game industry. His focus is expressive artificial intelligence, which would allow players to experience organic progression in games with real-time characters.

"What is the block to this story form moving forward? Experience has progression and that is very deeply complex," Mateas says.

"There is no design-only solution, and most people have the tendency to lock themselves in a closet and think, 'I'll try to code it up.' This inevitably dies because the tools just can't do it. The solution requires integrated advances in both design and technology."

In the mid-'90s Mateas worked at Tektronix Labs and Intel Labs on advanced human-computer interface research. Wanting to combine advanced experience design and technology research more deeply than he could in a corporate setting, Mateas enrolled at Carnegie Mellon University for his PhD in computer science and conducted research in artificial intelligence-based art and entertainment.

Game design naturally suggests development of artificial intelligence technologies and artificial intelligence research also suggests new game experiences, Mateas says, but the challenge is getting there.

"There is a lot of work being done by game developers in game AI, but until recently academic AI researchers did not take this work seriously. But now both researchers and game developers are starting to talk to each other and learn from each other," Mateas says. "When you focus on art and entertainment experiences in AI research, it raises questions that would not be raised in other ways and are not being raised in academic AI research. As we solve these problems, it opens new forms of art and entertainment that were not possible before."

As game AI research venues grow, Mateas sees the potential for the genre to change.

"We need rich and compelling human characters, but rather than the whole human experience, they should be a distillation of the human experience, a concentrated form of certain aspects of human experience, like a character in a movie. We need to build believable characters, AI characters that help you suspend your disbelief and treat the characters as if they are real," he says.

In June, Mateas and collaborator Andrew Stern, an independent game designer and artist, released *Facade*, an interactive storytelling computer game that puts the player in the role of a



character visiting two old friends and unwittingly walking in on a critical moment in their relationship. As the evening wears on, the player can manipulate the situation depending on how he handles the tense encounter.

"As we've gone through this project we have developed several new programming languages including ABL, which stands for A Behavior Language, which is designed for authoring interactive characters," Mateas says.

A Need for Risk-taking

In the Experimental Games Lab, students have completed projects including integrating ABL into existing game engines such as Unreal Tournament, allowing richer characters to be created for existing games.

An AI approach that allows interactive stories is a potential cure for the "sequel-itis" rampant in the gaming industry, Mateas says.

"Game designers and developers decry the lack of innovation in the industry. There is a push for game teams to be larger and larger and the industry is suffering from sequel-itis. There is a real resistance to risk-taking, companies generally only want to release something that has already

been successful in the form of a sequel. This problem is strongly recognized in the industry," Mateas says.

"Interactive stories are kind of the Holy Grail in the gaming industry, but no one has done it because of the research problems involved. You can't have the huge research problems that face AI in your path when you are creating a game. But because gaming is such a mass phenomenon, people are talking seriously about it. Games are going to be an art form and they are going to be the cinema of the 21st century."

It will be difficult to achieve that shift, however, because academic research funding is on the decline and the industry is not doing the kind of research necessary to move game AI forward, Mateas says. Yet, he insists, "it is clear that design along with research is the only way we are going to build the new genre of games." >>>

An article — described by Murray as "a manifesto" on Tech's approach and written by Murray, Mateas, Bogost and associate professor Michael Nitsche for the *Journal of the International Digital Media and Arts Association* — explains Tech's unique approach to game research, design and study. "Asking What is Possible: The Georgia Tech Approach to Game Research and Education" is available at http://www.idmaa.org/journal/iDMAa_Journal_Vol_2_No_1.htm.

"What we want our graduates to do is to go out and challenge existing conventions in the game industry. Our graduates are not just skilled in tools. We want them to have something to say about the world."

— Ian Bogost

DIGITAL GAMES: An Emerging Genre of Entertainment and Education

Garage Band Approach to Democracy

Christopher Klaus seeks to revolutionize creation, delivery of digital entertainment

"One of the components of interest on the engineering side was the extreme scalability of these games. Games used to be just you against the computer, then it expanded to you against 10 friends and now it is you against millions of other people. It is no longer your basic game engine because you have to build in a lot more scalability and security."

— Christopher Klaus

Christopher Klaus believes in democracy. He's not running for office, but he is off and running with a company he believes will create a new archetype for creation and delivery of digital entertainment content including computer games and films.

The co-founder of Internet Security Systems started Klaus Entertainment Inc. in 2003 to provide Kaneva.com, a Web site designed to create a platform that can be used by independent producers of computer games, films, television programs and music to distribute their works.

Klaus, Cls 96, says the underlying technological trends driven by digital entertainment — such as compression, storage and bandwidth — present emerging business models that have not been explored before.

"Long term, we will see content move toward any time, anywhere, any content. This will democratize video entertainment and distribution by anyone to anyone. This allows any content owner to publish and generate money without dependence on others. The content owner has central and total control," he says.

For consumers, the Kaneva platform will provide communities for films, games and other digital entertainment through a "channel" concept.

"Welcome to the next-generation TV set where everything is interactive. It is no longer the boob tube where you just sit back and watch," Klaus says. "Now you can watch a film or show and immediately join into an interactive



community focused on that show or game or movie."

Soon the company will undergo a name change to Kaneva Inc. "Kaneva is Latin for canvas and I wanted to make it about the team and, ultimately, the whole community that is going to evolve. I want to make an ecosystem for people who want to create content and who don't subscribe to the traditional creative process," he says.

The idea for Kaneva.com started with the successful "platform" strategy Klaus used with ISS, which he formed in 1994 while a student at Georgia Tech.

"It is a simple concept a lot of companies have moved, a mind-set where you try to build a base, a foundation, and leverage that across a lot



of components so they plug in together and work holistically," Klaus says. "Security is a perfect model where you have tons of disparate programs and the problem customers were facing is they didn't have a way to integrate them. ISS' current vision and direction is building a unified, holistic platform for security. When I started looking at entertainment, I could see video games moving into an area where I could leverage a lot that I learned from ISS."

An Explosion of Interest

Massive multiplayer online games, some of which have millions of players, have exploded in popularity, leading to technology and security issues.

"Computer games are becoming the social and digital lifestyle for today's generation," Klaus says.

With the light-speed advances being made in compression, bandwidth and storage space, new business models are emerging, he says.

"Owning a terabyte server a few years ago would have seemed ridiculous, but now it costs about \$1,000. The reason music took off on the Internet was the mp3. With an uncompressed CD, it would take half a day to get one song. With the mp3 and more compression you can get that content in minutes or even seconds," Klaus says.

"With storage quickly dropping in price and increased capacity and the compression standards increasing in the entertainment field, the >>>

DIGITAL GAMES: An Emerging Genre of Entertainment and Education

“What we’re able to do, and we will see if the mod community wants to do it, is you can take our engine and build a game for yourself on our game engine that allows you to make money.”

— Christopher Klaus

mpg4 is now available and I think video is on a similar curve. In five years, I think getting a movie will be as easy as getting a song.”

Klaus says iTunes legitimized online content distribution for music, a role he hopes Kaneva will serve for films, games and TV shows.

“Before iTunes, the music industry was saying downloading music was evil. It took someone from outside the music industry to create a great service and aggregate content and a simple model to make it successful and profitable,” he says. “The same will be true for the games and film industry. We are working on a very horizontal platform, a foundation that can be leveraged not only across one film or game, but the entire industry of films and games.”

Klaus says the goal is to help remove the financial barrier to production and distribution of digital entertainment content for independent artists.

“It is kind of like a garage band. The ability to create has gone solely from professionals to amateurs being able to distribute their content. Show me good content and that is what you will be judged on,” he says.

“There are huge barriers for independent game and film makers to reach their audiences today. There is an oligopoly of companies in both categories who own those distribution channels and unless you are a superstar or have good connections and/or lots of money, it is hard to break through those channels.

“What we’re driving toward with Kaneva is an online digital marketplace that empowers individuals to create interesting content and to have the ability to distribute it out to an audience. You have to crack the egg somewhere and I think there’s probably a great many people out there who are really talented but who haven’t had the opportunity or the break to get their content out there,” Klaus says.

Catering to Online Buyers

Kaneva is not seeking to put traditional media out of business, just to provide an alternate delivery source for undiscovered content. “There are still music stores. People still buy CDs, but there is a whole new generation of buyers of music online. Ultimately I have

to believe the same could be true for movies. It is happening, but unfortunately it is falling into the same pattern as music did in the beginning.

There were 100,000 copies of ‘Star Wars III’ on the Internet before it hit theaters, but there was no legitimate way to get that content,” Klaus says.

“‘Star Wars’ obviously has the power to draw people to the theaters, but two tiers down from that there are a lot of movies people don’t want to go to the theater to see. Those movies could clearly benefit by having a multi-avenue model to reach consumers. If they could offer consumers the option to buy the DVD, even for a premium, there are clearly people who are willing to pay to download that movie and burn it on a DVD to watch on their home theater.”

Similarly, most computer and console video games are released only through retail outlets. “There should be a way to download those games. It is faster than driving to the store and I don’t read the game manual even if you give it to me, so it would save on that cost,” Klaus says.

A Paradigm Shift

Kaneva.com has the potential to create a paradigm shift, particularly in the game industry, Klaus says. “There are 20,000 to 30,000 mod teams out there — little groups of people who modify existing games — who create their own maps and weapons and they breathe life into a game that probably would have been dead after a month and they keep it fresh with new content. Publishers are open to it because it helps them sell games, but they have restricted these mod teams to a purely nonfinancial model in terms of allowing them to use their game engine to build content but, because it is a derivative of their game, the mod teams can’t profit from it,” he says.

“What we’re able to do, and we will see if the mod community wants to do it, is you can take our engine and build a game for yourself on our game engine that allows you to make money.”

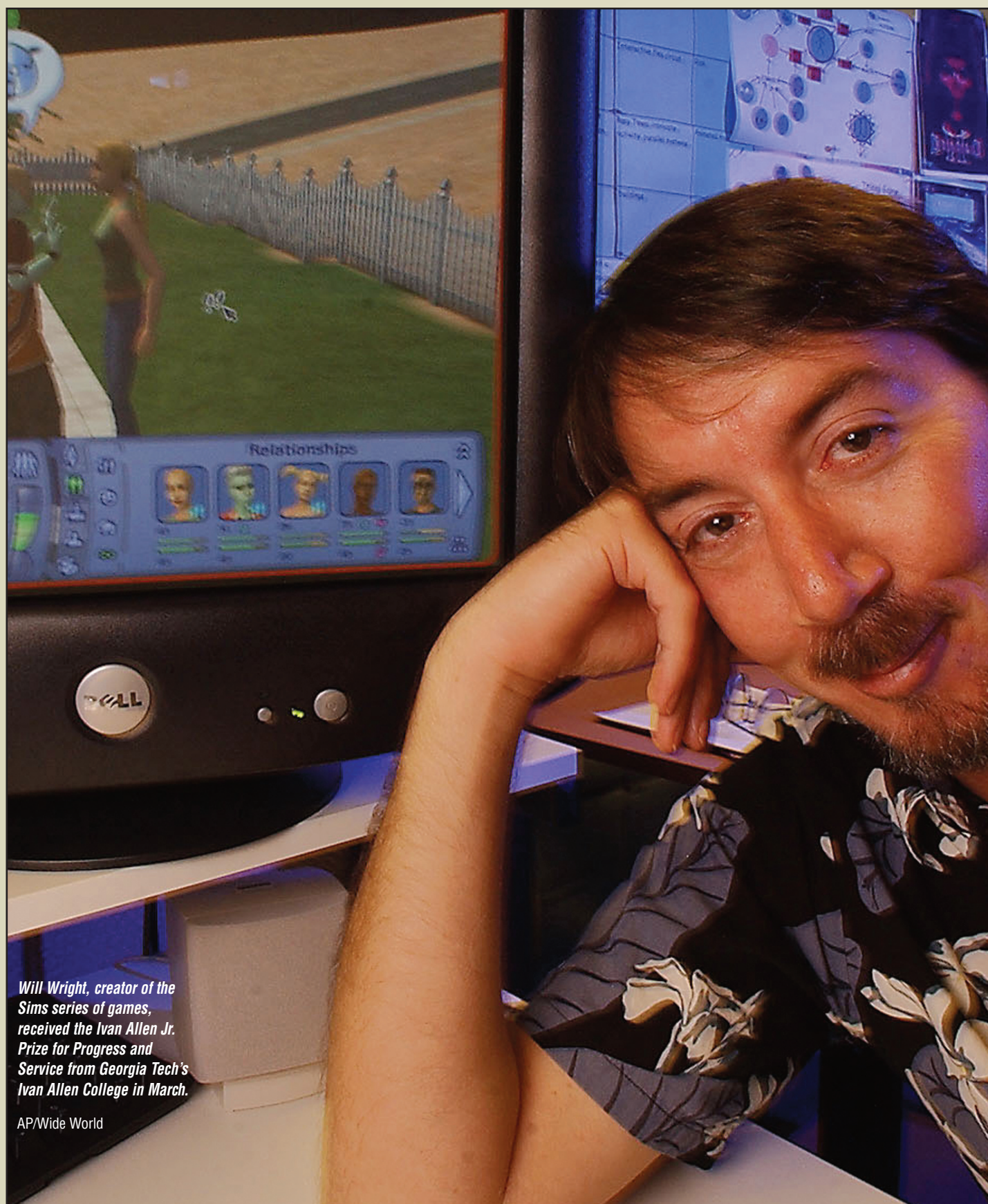
Klaus and his team at Kaneva currently are working with independent filmmakers and game designers to generate content for Kaneva.com and say they will open it to the public early next year.

>>>



Computer games have international appeal. Katia Menard, on the Georgia Tech Lorraine campus, plays a basketball game. Neeraj Kulkarni, a Tech student from India, plays a game in Atlanta.

DIGITAL GAMES: An Emerging Genre of Entertainment and Education



Will Wright, creator of the Sims series of games, received the Ivan Allen Jr. Prize for Progress and Service from Georgia Tech's Ivan Allen College in March.

AP/Wide World

The Godfather of Interactive Games

Sims creator encourages creativity among players

In the video games he has created, Will Wright gives players the opportunity to create individuals, families, communities and entire cities and to control those creations as they see fit.

In his next game, he will allow players to become a god.

Wright, recipient of the Ivan Allen Jr. Prize for Progress and Service, revealed some details of his new project, tentatively called Spore, in March at the Living Game Worlds Symposium held by Georgia Tech's School of Literature, Communication and Culture.

Spore "reverses that content-heavy trend that is not sustainable over the next generation of games," Wright says.

"There are trends in the industry I am concerned about," says Wright, creator of the hugely popular Sims series of games and co-founder of Maxis, now a division of Electronic Arts. "There is an extraordinary amount of content in The Sims 2, but as you double the amount of content, you don't necessarily double the value to the player."

The Growth in Teams

Wright says the teams it takes to create such vast amounts of content are becoming as large and unwieldy as the content they are creating. "The percentage of the team that is developing the content is growing faster than the size of the team writing the code. It is a very big topic of conversation in the industry that unless you can put \$25 million into creating a game, don't bother."

On the other hand, players are becoming more and more interested in creating their own content.

"Players hate boundaries, they want to be more expressive. The amount of value a player gets from a game when the players can create their own content and can have a higher degree of ownership is exponential," he says.

The aspects of the game development indus-

try have begun to collide over the past few years. "A lot of artists are coding. Designers are coders as well, so you have artist programmers and designer programmers," he says.

Watching how players played The Sims gave Wright ideas as well.

"People were creating content exclusive of the game and sharing that content outside of the game. I wanted to lower the friction of moving content from player to player and bring that back to the game," he says.

The Creative Act

In Spore, players create every generation of a creature "from bacteria to world god." The game system then animates the creature. As players learn the game and how to win, their creatures "evolve," allowing the player back into the creature editor to change aspects of the creatures' intellect and functionality.

"Once you've done that, the creature stops evolving and now you are in charge of the society. You begin to buy them tools instead of body parts," Wright says.

This is where the game more closely resembles the SimCity concept. Players design the city for their creatures, choosing the architecture and level of technological sophistication they have. Once a city has developed, players obtain vehicles and begin seeking out other cities to capture — culturally, economically or militarily. After conquering his own world, the player can move on to other worlds in the solar system, either conquering those planets or colonizing uninhabited worlds by bootstrapping the ecosystems to sustain life.

The game, expected to be released in fall 2006, also makes use of what Wright calls "content pollination," importing creatures from other players to populate a compatible player's ecosystem, including creatures, environment, buildings, cities and worlds.

"We want to put the player in the role of >>>

"Players hate boundaries, they want to be more expressive. The amount of value a player gets from a game when the players can create their own content and can have a higher degree of ownership is exponential."

— Will Wright



Courtesy National University of Singapore

DIGITAL GAMES: An Emerging Genre of Entertainment and Education

world builder rather than a character. The story is a side effect of interesting experiences, not a prerequisite. The game emphasizes causality — this causes that causes that — the stories are very portable,” Wright says.

To meet the expectations of a growing user base, game designers and creators must create more interesting and interactive games and game publishers must be willing to put them out.

“In the real world, there is finite real estate and a growing populace. In the virtual world, we are competing for a finite number of players in infinite real estate,” Wright says.

To attract a new player base to computer games, the industry needs to diverge from the current avenue of thought on game development, Wright says.

“We learned a lot from The Sims in that the typical customers were not gamers. There tended to be more women and it skewed broadly age-wise, from 10-year-olds to grandparents,” he says. “It created the idea that the computer is basically a point of leverage for their creativity and expressiveness, that they are not just playing, but it is more like a palette they could use to paint out situations and characters and stories, that the computer is amplifying their internal creativity and storytelling ability.”

This approach will be especially important to keep the next generation of gamers interested in what is being produced.

“The next generation of kids expects media to be infinitely malleable. They make their own CDs and videos, shoot and share digital photos over the Web. To them, media is more like clay, something they can manipulate and play with. For the generation before, media was something multinational companies would broadcast to you over a small number of channels,” Wright says.

Chicken-and-egg Gaming

There are a number of roadblocks to achieving the next level of user-centered designs. “If you are giving a user tools, you have to think about the interface and the player’s internal metaphor going into it. It is a level deeper than the typical game. On the business side, it is almost a chicken-and-egg issue. Game companies are not typically targeting a wider customer base

and since they never target those people, they will never buy games. We have to break that cycle,” Wright says.

Although interest has waned in traditional computer science and technology degrees, interest in game design has shot up among students entering college, but Wright says universities need to rethink how they teach students to better prepare them for an evolving industry.

“It is kind of hard to sell students on general engineering now because they can’t envision what they will do, but games are a point of contact they can relate to, it excites them. One of the interesting things about games though is that there are very few programs that give students competent education on what they need to learn to do,” Wright says.

“The best programs have some kind of overlap with computer science and liberal arts and only about six schools are doing that and producing the kind of people we are hiring; Georgia Tech is one school in that category.

“Tech is of one of the top five schools in educating students in this area because it is very highly interdisciplinary. That is a point of friction for a lot of academic institutions because they tend to go with these cellular membranes around departments, but what makes this field so interesting is its interdisciplinary nature. It requires a balanced education that involves technology and design and psychology all wrapped into one.”

Wright laments that games research is not viewed as a serious academic pursuit.

“It always astounds me how much people disassociate play with education. There has to be some reason we enjoy playing, some evolved circuit in our brain that helps us build models and solve problems,” he says.

“To me play is an incredible primitive cognitive technology. I expect educational institutions to be saying, ‘What are we doing? We are educating people. And what is the basis of evolutionary education? It is play.’ I expect teachers to be experts in the most powerful circuit in our brain for education, I expect an understanding of the way we relate to games and why we enjoy them to be fundamental to any teacher no matter what they are teaching. That people don’t take it seriously surprises me.” **GT**

As games become more interactive, reality and virtual reality can collide. At left, a student at the National University of Singapore is cast against the backdrop of The Sims 2 computer game.



Jeff Lunsford, ICS 88, who once aspired to be an astronaut before entering the business world, stands on the San Diego rooftop of WebSideStory, a maker of Web analytics tools.

Roni Galgano/The San Diego Union-Tribune

Natural Ability

Aspiring astronaut's sudden turn led to WebSideStory

By Kathryn Balint

As a boy growing up near Cape Canaveral, Jeff Lunsford had seen his share of NASA launches. He dreamed of flying in space himself one day.

Lunsford, ICS 88, did all the right things to launch a career as an astronaut. His Georgia Tech degree was part of his plan to end up at NASA.

He went into the Navy and flew F/A-18 Hornet fighter jets over Yugoslavia, again as part of his meticulously mapped-out career path. He even got his commander's endorsement to go to school to become a test pilot, the next step toward his space career.

So how did this 39-year-old wannabe astronaut land as the chairman, president and chief executive of WebSideStory, helping the San Diego provider of Web analytics tools go public and guiding it to profitability?

Let's just say that Lunsford made a 180-degree turn in his life.

By January 1994, Lunsford had a wife and a young daughter. He realized that he had eight years, maybe more, to go if he were to become an astronaut, and that was a big if. Only one in about 500 people who are qualified to become astronauts are chosen. "It truly is, at that point, a lottery," Lunsford says.

He started thinking about the guys his age he had read about in *Forbes* and *Fortune* magazines. These guys had struck it rich in the emerging high-tech industry. I could do that, Lunsford thought. And so, he returned to civilian life, with his young family, in his small hometown of New Smyrna Beach, Fla.

This time, the man who had carefully planned his life had no master plan at all.

He started by making a list of the top 20 technology companies he'd like to work for. But before he could submit his resume, Harold Brewer, a family friend he'd known since he was 5, dropped by. "Start a tech consulting company with me," he said.

Some might say starting a business and making a success out of it is as much a long shot as trying to become an astronaut. Lunsford, a risk-taker at heart, couldn't resist the offer.

That was the beginning of a profitable partnership with Brewer. Already a successful bank management consultant, Brewer had recognized that banks needed advice on computing systems and other technology.

He and another partner, Randy Roth, fronted the money for the new company, Brintech, based in New Smyrna Beach. Lunsford put in what he described as "sweat equity."

"He used to sleep on the floor in the office," Brewer says. "He'd work 20, 22 hours in a row, then sleep on the floor for a couple of hours and start over again."

It paid off. Banks throughout the nation became Brintech's clients. Before long, the company had revenue of \$3 million a year.

It turns out the nerves of steel, the ability to make split-second decisions and the mental acumen needed to fly a fighter plane are also good qualities for a businessman.

"Jeff's military background is part of what is unique about him," says friend James "Chip" Mahan, who sits on WebSideStory's board of directors.

"As a naval aviator, he is never afraid. If this engine blows up, if a piece of equipment fails, there are certain procedures you follow. Part of the challenge in business is when things go wrong, how do you handle it?" Mahan says.

"Jeff is so prepared and so trained by the U.S. Navy that you'll never see him get upset or not do the right thing in a crisis situation. You know, it's like being in the cockpit of an F-18."

Mahan met Lunsford 10 years ago at a banking convention, where both men were speaking before an audience of 1,000 bankers.

Mahan, the founder of Security First Network Bank, a pioneer in Internet banking, was the keynote speaker. Lunsford was among the panelists in a question-and-answer session.

"The first four or five questions were directed to me, and before I could answer, Jeff answered," Mahan recalls.

In his parting comment, Mahan told the audience, "I'm going to take Mr. Lunsford to dinner tonight, and because he is so much smarter than I am, I am going to attempt to hire him."

It took Mahan six months to lure Lunsford away from Brintech.

Lunsford became senior vice president of Mahan's company in Atlanta. There, his negotiating skills impressed Kurt Jaggers, a managing director of the venture capital firm TA Associates. >>>

"He's got analytical ability, natural sales ability and leadership ability that's pretty rare."

"He was on the other side of the table from me, negotiating the deal," Jagers says. "I remember making a mental note even back then that he's a tough, shrewd negotiator and that I'd like him on my side of the table."

Jagers was instrumental in getting Lunsford his first job as chief executive, at TogetherSoft, a Raleigh, N.C., maker of tools for software developers.

The stint was short-lived. A few months later, the company was sold.

Jagers kept his eyes open for another opportunity for Lunsford. Opportunity called in San Diego at WebSideStory.

WebSideStory makes tools that allow businesses to analyze the traffic on their Web sites. Its primary service, called HBX, lets companies know which pages on their Web sites are the most popular and which merchandise is selling the fastest online.

It also allows companies to analyze keywords entered by visitors to the site, how much time visitors spend on pages, what they buy, what they look at and what states they live in. The technology does not identify individual visitors.

Customers of WebSideStory's services include Lego, Best Buy and SignOnSanDiego, the Union-Tribune Publishing Co.'s online division. This month, Knight Ridder Digital, the online division of the nation's second-largest newspaper chain, selected WebSideStory's service to monitor its Web sites.

Jagers, the venture capitalist, who sits on the board of WebSideStory and whose firm has invested in the company, thought Lunsford was a perfect fit. "I wasn't sure there was much of a chance we could get him because he was getting pursued by a lot of people," Jagers says.

WebSideStory got its start in 1996 by giving away software that allowed

Web site owners to count the hits on their Web sites. The company made money by selling advertising.

By the time Lunsford arrived two years ago, WebSideStory was selling its Web site tracking service and counted *Fortune* 500 companies such as Disney among its customers, thanks to former CEO John Hentrich. Hentrich, a lawyer, is credited with keeping the company alive after the tech bubble burst.

Still, WebSideStory was losing money — and customers.

Hentrich "had done a great job of stabilizing the business," Jagers says. "He made sure we survived, which I'm very thankful for. Then, at that point, the priority really shifted to sales and marketing and how do we grow the customer base?"

That's where Lunsford came in.

Under his direction, WebSideStory went head-to-head with its competitors by dramatically reducing prices. Companies pay for WebSideStory's services based on the number of visitors to their Web sites.

"We almost cut the price in half, but we sold four times as much," Lunsford says.

Lunsford also emphasized getting longer-term contracts with customers.

And he hired a sales team outside San Diego. "They were trying to sell most of those contracts over the phone," Lunsford says. "You have to do it face-to-face."

Lunsford beefed up research and development as well. "We needed to invest heavily to get ahead of our competitors," he says.

Six months after Lunsford took the helm of WebSideStory, the company became profitable.

A year later, in September 2004, WebSideStory, which had earlier efforts to go public derailed by the high-tech bust, finally reached its goal with an

initial public offering that raised \$42.5 million.

And in February, WebSideStory announced that it was acquiring Atomz, a San Francisco company that makes Web search and Web content management applications. Lunsford says the services Atomz provides are a natural addition to WebSideStory's current services.

Lunsford has settled in for his third year leading the company's 200 employees. "He's got a combination of analytical ability and natural sales ability and leadership ability that I think is pretty rare," Jagers says. "Oftentimes CEOs have one or two of those strengths, but I think it's rare when you find somebody with all of those strengths and with the ability to shift comfortably between these skill sets. He's the whole package and it's great for the company."

Last year, WebSideStory reported revenue of \$22.6 million, a 38 percent increase from the previous year. Net income was \$1.8 million, in contrast with a net loss of \$1.9 million in 2003.

Brewer, Lunsford's former business partner, says Lunsford not only has business acumen, but he has people skills.

"People gravitate to Jeff," he says.

That includes employees.

"Everyone loves working for him," says Erik Bratt, WebSideStory's director of corporate communications.

Lunsford, a snow skier and a runner, is adapting to San Diego by learning how to surf, with some of the salesmen at WebSideStory as his instructors.

He got up once in his first outing, twice in his second. Ever the businessman, he thinks of it in terms of productivity.

"You could say I doubled my production," he says. **GT**

Kathryn Balint is a writer for the *San Diego Union-Tribune*. This article is reprinted by permission.

Phoenix Rising

The Southeast's biggest decorative granite and marble supplier had crashed and burned, but four Georgia Tech alumni came to the rescue. It was a wild roller-coaster ride.

By Neil B. McGahee

Photography: Gary Meek

In the 45,000-square-foot Phoenix Granite plant in Palmetto, Ga., about 15 minutes southwest of the Atlanta airport, laser-guided diamond-tipped saws cut ornately designed countertops from rough-hewn granite slabs weighing nearly half a ton.

It's hard to hear anything over the saw's high-pitched whine mingled with the gush of rushing water that is constantly sprayed to cool the white-hot blade tips.

It is the sound of economic rescue.

>>>



A team of Georgia Tech fraternity brothers — Jim Licata (left to right) Vern Hill, Mike Turchi and Todd Collins — have plenty to smile about in the Phoenix Granite showroom. They were able to raise the Palmetto, Ga., business from the ashes.



Founded in 1996 by a South African businessman, Newton Granite quickly became a leader in decorative stone sales. Do-it-yourself giants The Home Depot and Lowe's were steady customers. Annual sales topped \$15 million.

But the plant was shut down in September 2004 after immigration officials discovered the owner was falsifying work visas.

The lenders began looking for new ownership.

"The primary lender was especially uncomfortable with the situation," says Todd Collins, Mgt 82. "They had worked with me on other deals so they asked if I wanted to put together a management team and buy the assets."

Collins didn't have to look for his team any farther than three former fraternity brothers: Jim Licata, Mgt 83, Mike Turchi, CE 82, and Vern Hill, Mgt 81.

"We were Theta Chi in the early 1980s," Collins says. "We had known each other a long time, but we all had businesses of our own and hadn't spent a lot of time together after Tech."

To rescue the fallen giant, the entrepreneurs were asked to apply management skills learned at the Institute along with their collective experience.

"We conducted three months of extensive research and realized that



From factory to finished product

with all the contacts we had with Georgia builders and developers — many of them Tech alumni — we could pull this thing off," Collins says. "We planned to draw on existing business relationships, but we also wanted to benefit from the explosion of residential development in the South. We found that the market's appetite for stone kitchen

and bath accessories is very strong." The group hired Tim Shaw, former president of Granite

Concepts of Tennessee, to take the reins of the new company, then began calling back former Newton employees who had been idled by the work stoppage.

"These employees had played a great part in the company's success and they didn't want to leave," Collins says. "After we bought the company, they came to us and said, 'Let's turn this thing around and get it back to where it once was.'"

"They suggested we call the new company Phoenix, like the mythical bird that rose from the ashes."

Although they were optimistic, the obstacles were daunting. The \$15 million in annual sales had fallen to less than \$4 million.

"We had an operating, state-of-the-





Product: Granite slabs' transition to home art

art plant capable of producing a huge amount of product, but the customers had dwindled," Turchi says. "And although we had purchased only the company's assets, it was very important that we negotiate with suppliers and creditors immediately to explain the transition in hopes of maintaining a fairly transparent changing of the guard. We're proud to say that, without exception, our supplier partners stepped up and did the right thing.

"We had a lot of ups and downs," he says. "One day we would say, 'This plant has tremendous capacities, I hope we can keep it going.' And the next day, one of us would walk in with a smile and announce, 'We got another builder commitment.' It was a wild roller-coaster ride, but we never

wavered once because we knew our Tech and fraternity ties would get us through it."

Turchi says the team decided that offering a higher quality product than the competition was the way to work their way again to the top of the stone business.

"When we lay out those big slabs, we make sure the stone is from the same bundle and the same vein so the vein patterns line up. Then we insert reinforcing rods through the stone to ensure there is no cracking. There are ways to cut corners but that's just not in our vocabulary," Turchi says.

Business volume is approaching past numbers and growing steadily. The Home Depot and Lowe's have returned to the fold and calling cards

from multifamily and condo developers as well as some of Atlanta's top single-family home builders again fill the company Rolodex.

The management says the tutelage of professor emeritus Phil Adler was the catalyst for their success.

"Education at Tech is not only what you learn as far as books are concerned but how you apply lessons learned to a problem," Hill says. "Dr. Adler used the Socratic method of teaching so we learned to use logic and organization to solve everyday problems. We're all juggling other businesses and our cell phones are constantly ringing.

"It's sort of like having a calculus and a physics test on the same day and both are life or death." **GT**

>>>INTERVIEW

JOHN

John Kelly is ambassador-in-residence at the Center for International Strategy, Technology and Policy of the Sam Nunn School of International Affairs at Georgia Tech. He is also president of John Kelly Consulting, an international firm. He was assistant secretary of state for the Near East and South Asia from 1989 to 1991, during the Gulf War and the Madrid Middle East Peace Conference. He was American ambassador in Beirut from 1986 to 1988 during the war years. He served as U.S. ambassador in Helsinki, Finland, from 1991 to 1994. A career diplomat, Kelly has testified before committees of the U.S. Congress on more than two dozen occasions.

Interview by
John Dunn

Photography:
Gary Meek

What are terrorists seeking to achieve?

Terrorism is usually associated with people who are trying to extract some political benefit and they can't do it via the ballot box so they resort to violence, often against innocent people. Osama bin Laden's terrorists are not seeking a political goal, but a religious outcome. His number one target is not the United States. It's what he calls the corrupt regime in the Muslim world — in the Arab world.

There isn't any set of outcomes that one could negotiate with Osama bin Laden. He wants a totally different world. He wants a world that is basically empty of Western civilization because he believes he has a God-given recipe how the world and how countries should be organized. Now he's a minority within a minority in Islam. Most Muslims are peaceful. He does not speak for the billions of

Muslims in the world, but he speaks for this tiny virulent minority. Unfortunately he has a number of sympathizers and they are capable of wreaking terrible violence, as we saw on Sept. 11, 2001, in New York.

You have experienced terrorism firsthand in Beirut, Lebanon. How should we react to terrorism?

When I got to Lebanon there was a vicious civil war still under way with many different contending armed factions. The U.S. Marine barracks had already been blown up, with the deaths of 243 young Marines. The American Embassy had been blown up twice. We had learned some bitter lessons about perimeter security.

We have seen American embassies and American military installations attacked overseas, not just in the early 1980s, but in the 1990s, in Africa, where two of

our embassies were blown up, in Saudi Arabia where U.S. Air Force dormitories at Khobar Towers were blown up.

The terrorism that struck us on 2001 was of a different nature. It was the result of an intelligence failure. America is getting better but we are a big country and we're slow to move. Unfortunately we are seeing some of that in the aftermath of the disaster in New Orleans and throughout the Gulf Coast in Mississippi and Louisiana. But that also has lessons to our vulnerability to future terrorist attacks — which I believe will happen.

On American soil?

On American soil.

Are we doing enough to defend our borders?

If you look at one of the scenarios that many people are concerned about, the honest answer is probably not.

World trade and world shipping depends on the container. Between 14,000 and 20,000 containers enter the United States each day. We're inspecting about 2 percent of that number. We try to know who is shipping. We're setting up pre-inspection procedures in foreign ports, but that is a global size problem and we're probably vulnerable on that front. If we inspected every con-

KELLY



There isn't any set of outcomes that one could negotiate with Osama bin Laden. He wants a totally different world. He wants a world that is basically empty of Western civilization because he believes he has a God-given recipe how the world and how countries should be organized.

>>> INTERVIEW

We need to stay in Iraq long enough to complete the mission of training the Iraqi armed forces and police and intelligence services so they can deal with the problems in their own country. If we pull out next month or by Christmas, we will have left a vacuum and the terrorists are going to exploit that and we will have more of a problem downstream.

tainer, had custom guys look at the contents, we'd bring trade to a standstill. Sooner or later somebody is going to do some damage to us by that means or a different means.

What about the nuclear threat?

There are two aspects to that. One threat is that terrorists lay their hands on an actual nuclear weapon and smuggle it in — maybe in a container — and detonate it. That takes some sophisticated competence. It's a complicated task.

The other threat is called the radiological bomb — radioactive material that won't produce a nuclear detonation like Hiroshima, but let's say isotopes that are used in radiation treatment in the hospital that can do damage to individuals who are exposed. If terrorists lay their hands on some radioactive material and strap it to a stick of dynamite, it could probably make a lot of people sick with some sort of radiation poisoning, plus it would generate a panic.

There is the threat of nuclear, biological or chemical agents. A lot of experts believe there is a 50 percent probability over the next number of years that something like that will happen in the United States.

We live in a dangerous world. What's the answer? Vigilance, protection, good intelligence, good police work and well-trained first responders.

Does our democratic society and freedom make defending against terrorism more difficult?

The Patriot Act, which was passed after Sept. 11, 2001, has been a subject of some contro-

versy. But I am not one who believes that it has intruded or significantly diminished anybody's civil liberties. There are others who think differently.

There are a growing number of people who feel we should pull out of Iraq. Do you agree?

No. I think we need to stay in Iraq long enough to complete the mission of training the Iraqi armed forces and police and intelligence services so they can deal with the problems in their own country. If we pull out next month or by Christmas, we will have left a vacuum and the terrorists are going to exploit that and we will have more of a problem downstream. I understand that there is a legitimate debate about our going into Iraq. I don't think we have the luxury of turning our back on it now.

Osama bin Laden's followers would be able to take over the country and they would be busily plotting their next attack on the United States with some impunity.

A large number of Iraqis voted to support the new government. Where are the terrorists coming from?

Most of the terrorists in Iraq are homegrown. They are disgruntled people who used to work for Saddam, they are Sunnis who see their privileged role in society is being undermined by the democratic system, and there are obviously some foreign fighters. But I don't think the foreign fighters are the bulk of the people who are giving us problems every day.

In the best scenario, the new constitution gets passed in October. Even if it fails in the vote,

under their provisional government, they'll have another general election. The one last January — everybody said was actually pretty darn good — 75 percent of the Iraqis went and voted in a very dangerous situation.

Iraq can stagger its way toward a politically capable government. In the meantime, I believe we are training army and police forces vigorously so that as those numbers grow, they'll be able to take more and more for their security. I don't think it's a fast recipe, but I think within two or three years we can be significantly out of there.

What can be done concerning the threat to businesses and businesspeople?

There are two ways to look at the problem for businesspeople internationally. One is the threat to individuals. In Latin America there have been many American businessmen kidnapped by either thugs who wanted ransom money or by some with a political agenda. There is a matter of individual security whether you are doing business in Pakistan or Brazil.

The other is the threat to the business itself. The natural disaster in New Orleans shows us something. Some of the businesses had duplicate computer files in other locations. Some businesses had provisions for a disaster — whether it was a terrorist disaster or a natural disaster. Many businesses did not.

Depending on the size of the business that is operating internationally, the leaders of that business need to look at whether the operations are vital to the strength of the company. If they are, they need to plan not just to

protect their personnel from kidnapping or assassination, but also to protect the business processes and the business information in that country.

It sometimes appears that the United States is the terrorist target, but how do you see the world picture?

The United States is not the only target. We've seen what happened in London and Spain. There was a plot to fly an airplane into the Eiffel Tower.

We are the most visible and probably the most involved target because we're the biggest country. We have a greater reach. There are more American businesses around the world than any other national business and more business traveling. Because we are number one, we are an obvious target. Although I have been out of the government for 10 years, I'm told the intelligence exchanges are really quite good these days with the British, the Germans, the French, the Chinese and the Japanese. That's out of the public eye, but that is the kind of long-term work that will allow us to prevent terrorists from moving freely around the globe or assuming other identi-

ties or coming to any one of these countries.

What role should America take in the world?

Some people believe that America has a vocation to alleviate suffering around the world, and that's a noble part of the American tradition. Other people believe that we can help by increasing free trade, which will provide more jobs for more people around the world. Some people believe that we have a vocation — and the president has certainly promoted that — of spreading democracy. You can get a debate going within political parties or among parties by asking what should America really be doing. I believe there is a common, broadly shared belief that America cannot be the world's policeman. We cannot take care of every problem in every country. The U.S. cannot go to every trouble spot in the world and make it right.

If things go well in Iraq, how do you view the war on terror?

It's going to be a long-term

war. Let's assume that things go very well in Iraq. Afghanistan is still not under control. We know there are cells of al-Qaida working in Pakistan, Bangladesh and the Philippines. These are small groups of people, but it's going to take a long time.

I think the war on terror is going to be with us — I'm sorry to say — 20 to 30 years at a minimum.

Does that mean the country comes to a halt? No. But from time to time, we're going to take a terrible, grievous blow, like Sept. 11. That will not stop this country. That will not bring this country to its knees.

And at the end of the day, the United States is going to prevail. **GT**

I think we can maintain our democracy, maintain our civil liberties and still increase our antiterror posture. I don't think it is inconsistent to maintain our democracy and our civil liberties and yet have a firm antiterrorist stance.





FACULTY PROFILE

International Adventurer

For 30 years, Tech professor Roger Drury has been a rolling stone, globe-trotting on a shoestring to experience the world and learn about its people.

By Maria M. Lameiras

Photos: Caroline Joe

Thirty years ago while working in a Kentucky refrigerator factory, Roger Drury made the decision to travel as far away as he could. "I wanted to go somewhere I could use my French and that would be challenging," says Drury, who was an undergraduate at the University of Kentucky in 1975. "I was accepted as a volunteer with an agricultural school funded by the Presbyterian Church in Mali in western Africa. It really was in the middle of nowhere."

That impulsive exodus from rural America has led Drury to travel around the world and into an academic career that serves international students and businesspeople who come to the United States on their own adventures.

Drury is an instructor at Georgia Tech's Language Institute, which was founded in 1958 as a place where international students could improve their English. More than 1,000 international students, business professionals and visitors enroll at the Language Institute each year.

In 17 years with the program, Drury has seen it grow from a continuing education element to an independent entity that is one of the largest of its kind in the country.

"We start with students who can't speak a word of English and by the time they leave they are fluent and ready to work in the United States or study at any American university," Drury says.

Although most of those enrolled in the program are not Georgia Tech students, some apply to

graduate school at Tech while professionals go through the curriculum for business purposes, taking courses in grammar, reading, writing, speaking and listening. Students may also take elective courses including current events, business communication, fluency through dramatic activities and American film. There are evening classes in conversational English, business and technical writing, accent reduction and exam preparation.

The program partners with Tech's Center for the Enhancement of Teaching and Learning to teach international graduate students.

"This is a very intensive program. We have an international reputation and that draws students here," Drury says.

During the two eight-week sessions he teaches each semester, Drury takes his students on day hikes to the Cohutta Wilderness Area and the Appalachian Trail in north Georgia. "I show them a bit of America they might otherwise not get to see."



Working with international students feeds Drury's own passion for travel. Before he left Mali in 1977, Drury co-wrote a grant proposal for a well-digging project designed to prevent the disintegration of villages because of wells going dry. The grant provided equipment to deepen the wells and keep the villages intact.

Although the grant proposal was funded by WorldVision, there was no one to run the project when Drury returned to the United States to finish

his undergraduate degree. After receiving his degree in English literature, he went back to help run the program.

In addition to purchasing equipment, hiring workers and monitoring progress, Drury also set dynamite charges to blast out the wells — with instruction from workers at a large Soviet cement factory in the nearby desert. "They blast to get some of the components that go into cement, so they showed me what to do," says Drury.

"Here I was in 1976, in the midst of the Cold War, working in the bush where there were no Americans and no Europeans anywhere around, and here are these three Russian guys out in the middle of the desert bored out of their minds. I didn't speak Russian and they didn't speak English, but we became friends." >>>

Roger Drury and friends cascade down the rapids of the Nile River on a summer trip to central Africa. There's a lot of freedom in traveling alone, he says, but when you travel with friends, they often introduce you to "things you might never think of seeing."

>>> FACULTY PROFILE



On a trip to Africa this summer, Drury sliced through the rapids on the Nile River and photographed zebra on a grassy plain. On other trips he has seen the headwaters of the Amazon, hiked the Inca Trail and spent a summer in India. "You don't need a lot of money; all you need is a passport and a ticket," he says.

After another year in Mali, Drury returned for graduate school at the University of Florida, earning a master's degree in arts, literary theory and linguistics. He spent summers traveling to Mexico, Central America, Zambia, Zimbabwe, South Africa and Botswana.

"I didn't have a lot of money, so Europe was out," he says. "I went to Peru for two months and hiked the Inca Trail and visited Machu Picchu and Lake Titicaca. The headwaters of the Amazon come out of Peru and I went there as well," says Drury.

While hiking through the Andes Mountains, Drury and his friends came upon a village he describes as "a little creepy."

"No one would talk to us. This was when the Shining Path guerilla movement was active and we realized later that the villagers were afraid to have anything to do with us because the guerillas were there. Soon some Peruvian military guys came through and saw us and asked us what the heck we thought we were doing. They loaded us into a military truck and hauled us out of there."

Drury received his master's degree in 1981 and moved to France to teach business English and attend lectures at the University of Paris. In 1984, he returned to the University of Florida for his doctoral studies. He joined Tech's faculty in 1988 on a Marion L. Brittain teaching fellowship

after completing coursework for his PhD in American literature and contemporary literary theory and linguistics, but just shy of finishing his dissertation.

While at Tech, Drury has continued to travel.

In 2001, he received a Fulbright teaching grant to the Universidad del Norte in Barranquilla, Colombia. He arrived in June and was there when word of the Sept. 11 terrorist attacks came.

"Seeing that from outside of the country was eye-opening," says Drury. "The people in Colombia were saying, 'We have terrorism all the time, what is the big deal?' But they didn't have anything of that scale. They were also really afraid of what the American reaction to the attacks would be. They thought of us as this gigantic superpower and they thought we would just go off our keel and do something drastic."

When he returned to the United States in December 2001, Drury says he came back to "an entirely different country than the one I left. People were angry and frustrated and scared."

In the summer of 2004, Drury traveled to the United Arab Emirates on a Georgia Tech project to set up the English department at a university being established in Dubai. When the project was dropped, he traveled south to Kenya and Tanzania, where he climbed Mount Kilimanjaro.

Once at the summit, an exhausted Drury snapped photos and savored his hard-won success, but he couldn't make it to the camp where his guide planned to stop. "About halfway there my legs just gave out and I said, 'Sorry, but I'm not going any farther,'" Drury recalls.

Drury likes traveling with friends for the companionship, but enjoys traveling alone too. "When you are by yourself you are pretty free to do what you want when you want," he says. "On the other hand, when you travel on your own you only see the things you are interested in and you may be closing off things you might never think of seeing."

During a five-week trek through eastern Africa this summer, a traveling companion who is a nurse wanted to visit a dispensary in Uganda.

"I never would have gone on my own, but it was an important component of the trip for her. People you travel with can broaden your experience," Drury says. "The important thing is just to do it. You don't need a lot of money and training. All you need is a passport and a ticket." **GT**

>>>PHOTOFINISH

Atkins' Power Diet

No gas? No problem. Dale Atkins, a senior research engineer in aerospace engineering, isn't out of fuel even when service stations are. He drives a 2001 Sparrow Corbin electric vehicle that he recharges overnight for commuting to and from work. The one-person vehicle has a range of 26 miles per charge — newer batteries get 40 miles per charge — and goes at least 70 miles per hour. Atkins bought the three-wheel vehicle, which is classified as a motorcycle, in June with 2,000 miles on it. Atkins, who lives in Midtown Atlanta and is a member of the Atlanta EV club, has added another 800 miles on it. "It's a cool car to drive," he says. **GT**

